

OCTOBER 1994 \$2.95 US \$3.50 CAN £2.25 UK

SCUBA DIVING

THE BIG BONAIRE GUIDEBOOK

- ▶ Vacation Bargains, p. 24
- ▶ 9 All-Inclusive Resorts
- ▶ 25 Marine Park Dives
- ▶ Operators' Secret East Coast Dives

Close To Home And Gin-Clear

FLORIDA SPRINGS

Supply High-Voltage Year-Round Fun

UNTOUCHED SOUTHERN BELIZE

Name Your Own Dive Sites Among Waves Of
Whale Sharks, Pods Of Porpoises

LOOK AND LEARN: THE AMAZING PRIVATE LIVES OF FISH

PLUS

- ▶ Arkansas' Lake Ouachita
- ▶ Are Cheap Airfares A Safe Bet?
- ▶ Cozumel Operators
Fighting For Your Reefs





A Thousand Dollars Says You Can't Guess How Many Options You Get On A Toyota 4Runner.

Okay. That was a little too easy. So we'll make good on the Toyota 4Runner Extra Value Package. But before we do, here's a little taste of what you'll get in addition to the above.

Like 150 horses. "Shift-on-the-move" 4WDemand. And Hi-Trac independent front suspension. All the stuff you'd expect to find on a tough SUV like the 4Runner. Plus,

plenty of room for you, the camping gear and, of course, the kids.

Alright, here's another one. Betcha

can't guess what sport utility vehicle has the legendary reputation for quality? That's right.

You win! But then again, if you're in a 4Runner how could you ever lose? The Toyota 4Runner 4WD SR5 V6.

For the way there.
For the way back.

Save Up To
\$1000
On Option Packages.*

 **TOYOTA 4Runner**

"I love what you do for me."

Call 1-800-GO-TOYOTA if you'd like a 4Runner brochure and the location of your nearest dealer. Toyota reminds you to Tread Lightly™ on public and private land.
*Savings based on MSRP of individual options. Actual dealer price and customer savings may vary. Buckle Up! Do it for those who love you. ©1994 Toyota Motor Sales, U.S.A., Inc.

Inside Scuba Diving

BY STEVE BLOUNT

YOUR WINNING WAYS

Some days this job is so much fun, I wonder why I'm even taking a paycheck. This is one of those days. That's because I get to announce a whole raft of winners, ranging from which of you won the \$5,000 Dream Dive Vacation contest and the Great Bonaire Underwater Video Challenge to a slew of critter sleuths and the winners of the \$10,000 Robert Rodale Environmental Achievement Award.

First, the Dream Dive. You may recall that the cover of the May issue featured a signpost. The contest required you to use the mileages on the signpost to figure out where the photo was taken. And boy, am I impressed. What with educators weeping and moaning and gnashing their teeth over the deplorable ignorance about geography in the United States, I had no idea so many of you would nail the location. Of the 7,000 entries we received, more than 5,000 of you got the right answer: Little Cayman.

Entries containing the correct answer were mixed up in a dive bag and our editorial assistant, Camille Shearouse—who coordinated the contest and suffered the most paper cuts opening envelopes—plucked one.

And the one she plucked was sent in by Gus Lee of Wake Village, Texas. The whole staff called Gus to congratulate him. Once he got over the initial shock of being cheered via speakerphone, said he was "real pleased" and promised to let us know where he's going to go with the \$5,000. We wanted to send a photographer out to snap a picture of Gus accepting the check, but he demurred because he "didn't want to make a big deal out of it." Too late, Gus. Sorry.

While we're talking about the Dream Dive contest, there have to be

runners-up of sorts. The variety of correspondence we received was astounding. Dick Hess of Denver, Colo., not only got the right answer, but also sent an unusual postcard. We can't describe it in a family magazine, but it did give us a chuckle, especially since he added a postscript: "How about a prize for best postcard submitted with entry?" OK, Dick. You've got a *Rodale's Scuba Diving* T-shirt headed your way.

The above-and-beyond-the-call-of-duty prize goes to Harold Barton of Palm Beach Gardens, Fla. Harold informs us that he used map GNC 9 issued by the Department of Defense Mapping Agency Aerospace Center: "This map is a Lambert conformal conic projection with standard parallels at 7 degrees 40 minutes and 38 degrees 20 minutes. Among the advantages of this particular map are that it is scaled for every 10 degrees of latitude. This is important because the reference points are within 2 degrees of the 20th parallel." Well, OK. Harold went on to position all the Cayman Islands using our reference points as shown on GNC 9 and, after doing a least-squares analysis, concluded that Little Cayman was the best answer.

Heck, Harold, we got the mileages using a Rand McNally atlas and a wooden ruler we bought at K-Mart. We're sending you a T-shirt for making the effort. Also, the next time we charter a live-aboard, you're getting an invite to come along as navigator!

Moving from invitations to invertebrates, we're happy to announce that Ron and Midge Silver of Atlantic Beach, Fla., correctly identified the mystery critters that appeared in the June '94 issue. The four mug shots were of a solitary hydroid, long-horn nudibranch, a corallimorph and a hid-

Rodale's SCUBA DIVING

Executive Editor
Steve Blount

Managing Editor
David Taylor

Senior Editor
Lisa Walker

West Coast Editor
John Brumm

Product Tests
Jon Hardy

Associate Editors
Robert S. Butler, Keith Phillips

Assistant Editor
Nick Lucey

Research Associate
Patricia Wuest

Editorial Assistant
Camille Shearouse

Editorial Interns
Unndor Jonsson, Tanya Walton

Art Director
Janice Shay

Associate Art Director
Geoff Stevens

Assistant Art Director
LaTrelle Ferrelle

Contributors
David Abrahamson, Roy Blount, Jr., Tim Cahill, Cathy Church, Chris Crumley, Bret Gilliam, Howard Hall, Paul Humann, Alex Kirkbride, Paul Kvinta, Bucky McMahon, Karen Minot, Amos Nachoum, M. Timothy O'Keefe, Mort and Alese Pechter, Doug Perrine, Wes Skiles, Rick Sammon, Steve Simonsen, Marty Snyderman, John L. Stein, Phil Trupp, Franklin Viola, Norbert Wu

Main Editorial and Advertising Office
6600 Abercorn Street, Suite 208
Savannah, GA 31405
(912) 351-0855, Fax: (912) 351-0735

Rodale's Scuba Diving (ISSN 1060-9563) is published monthly, except February and October, by Rodale Press, Inc., 33 E. Minor St., Emmaus, PA 18098. Second class postage paid at Emmaus, PA, and additional mailing offices. **POSTMASTER: Send address changes to Rodale's Scuba Diving magazine, P.O. Box 7589, Red Oak, IA 51591-0589.** Subscription rate for 1 year (10 issues): United States, \$14.97; Canada, \$19.97 Canadian funds, includes GST #R122988611; all other foreign, \$24.97 U.S. funds prepaid. ©1994 by Rodale Press, Inc., J.I. Rodale, Founder; Ardath Rodale, Chairman of the Board; Robert Teufel, President of Rodale Press; John Griffin, President of the Magazine Division. All rights reserved.

LET US HELP YOU! If you have a problem with or question about your subscription, please call our customer service toll free
1-800-666-0016

Rodale's SCUBA DIVING

Publisher
David S. McAfee

Advertising Promotions Manager
Susan W. Smith

Advertising Art Assistant
Mona A. Stevens

Production Director
Kevin R. Whitworth

Production Assistant
Jayne Jackson

**Assistant to the Publisher/
Billing Coordinator**
Colleen Abruzzi

Vice President, Circulation
Ed Fones

Subscription Manager
Brian Merritt

Subscription Services Manager
Darlene Wojiski

Name Acquisition Associate
Michele Grogg

Single Copy Sales Director
Richard Alleger

Direct Sales Manager
Corey Folta

SALES OFFICES

New York
733 Third Ave., New York, NY 10017
(212) 697-2040, Fax: (212) 697-8715
Kent Ebersole (212) 573-0387

California
106A W. Hawthorne, Fallbrook, CA 92028
Frank J. Minishak (408) 746-0617, Kim
Paulsen (619) 723-3626, Fax: (619) 723-4521

Georgia
6600 Abercorn St., Suite 208, Savannah, GA
31405 (912) 351-0855, Fax: (912) 351-0890
Dane B. Farnum, Southeastern Sales Manager
(912) 351-6233, Jan Britt (912) 351-0855,
Eric D. Zincenko (912) 351-6227,
Laura Settles, Sales Assistant

Detroit Representatives
Englehart Sales Service: Ron Englehart, Cathleen
Herman, Tom Lloyd, Jim Wald 2685 Lapeer
Rd., Suite 103, Auburn Hills, MI 48326 (810)
373-5030, Fax: (810) 373-6841

Corporate Office
Rodale Press Inc., 33 E. Minor St., Emmaus, PA
18098 (610) 967-5171, Fax: (610) 967-8963

President/Magazine Division
John Griffin

Group Vice-President
James C. McCullagh

The contents of this publication, including diving techniques and use of diving equipment, reflect the individual experiences of the writers and are not necessarily the recommended practices of Rodale Press, Inc. and are not intended for the sole purpose of diving instruction. Individuals seeking to participate in activities described in this publication should be properly trained and/or certified for such by a qualified professional diving instructor. Diving or use of diving equipment by untrained individuals can lead to serious injury or death. Neither Rodale Press, Inc., *Rodale's Scuba Diving* nor its contributors shall be liable for any mishap claimed to result from use of such material.

den anemone. We're sending Ron and Midge the deluxe boxed edition of *The Reef Set* and we'll even get it personally autographed for you by author and RSD contributing editor Paul Humann.

Speaking of Paul Humann, most of our readers are already aware of the nonprofit Reef Environmental Education Foundation (REEF) which he helped found along with Ned DeLoach. Your response to REEF, featured in our February '94 issue, was phenomenal; more than 2,000 members signed up in the first quarter of this year. The purpose of REEF is to involve active divers in protection of the marine environment. REEF members do this by contributing to a master database containing information about the population of species on the world's reefs. There are organized "counts," sponsored by REEF, in which a group of divers go to a dive location and identify as many species of fish—and estimate their numbers—as they can. So far, counts have been held in Key Largo and in Honduras. Individual REEF members take survey sheets on their personal vacations and identify and count the fish wherever they go. These survey sheets are sent to REEF headquarters, scanned by computer and the information stored in a database.

"We're already hearing from scientists eager to study our data," says Ned DeLoach. "Nothing like this exists for the ocean; there is no master census file that can tell scientists what fish live where and whether their numbers are increasing or declining. The REEF database will help them do just that."

Rodale's *Scuba Diving* believes that this is just the sort of grass roots effort that our magazine was founded on. It involves individuals—each doing a small part—creating a very big and very important result. Personal responsibility and personal activism were the philosophy of Robert Rodale, the late chairman of Rodale Press, Inc., and we are sure he would be proud to have the award named for him presented to REEF. As fate would have it, when I called the REEF crew to share the good news, they were all out in the Dry Tortugas doing a fish count. When I did reach Laddie Akins, the organization's president, he had just come in from the

rinse tanks at the Atlantis Dive Center in Key Largo, where he works. I think all of us can sleep well, knowing there are dedicated people like Laddie in the water, on the reefs, every day.

In the water and on the reefs of Bonaire, a group of dedicated underwater videographers participated in our first underwater video challenge in April. For winners of that contest, check page 14.

Last issue, we asked you to submit essays on your favorite dive. Well, we got more than a few, all of them fascinating. The one we chose to print was sent in by Judy Greer of Peoria, Ill. The deal was that we would send the winner \$50, but Judy says she wants us to donate her \$50 to the Divers Alert Network (DAN). Wow. We were so impressed, we threw in another \$50 and sent a check for \$100 to DAN to help support their ongoing research on improving diver safety.

And from charity, we move right along to honesty. On my last dive trip to the Turks & Caicos, I managed to leave my CEDAM T-shirt behind on the dive boat at Mt. Pleasant Guest House. I remembered the shirt at about 6,000 feet on my way home and was bummed. Besides being a really cool shade of green, CEDAM (Conservation, Education, Diving and Marine Archaeology) is another very worthy nonprofit diving organization and the shirt was a gift from its president, Rick Sammon (another RSD contributing editor). A few weeks later, I got a package in the mail. It was my CEDAM shirt. It had been carried home, carefully laundered and then sent on to me by Nelson Campbell of Boston, Mass., one of the guests who had been diving with us on the boat. Actually, Nelson did such a good job of cleaning and folding the shirt that I'm thinking of sending all my dive apparel to him (just kidding, Nelson).

I guess all of this put me in a good mood because it reminded me why we're doing this magazine. It's for all of you. It's for people like Judy, Dick and Harold, Paul, Ned and Laddie, for Gus, for Rick, Ron and Midge, Jack and Robert. And for kind people like Nelson, who make the extra time to take care of a dive buddy. Thanks to all of them—and thanks to all of you. ☺

Be Comfortable.

The OceanPro V buoyancy compensator represents a revolution in comfort technology. It stretches, flexes, and conforms to your body as you breathe and move, never possible before BioFlex™, the "living fabric" invented by Oceanic.

Unlike ordinary buoyancy compensators, the OceanPro's BioFlex bladder and shoulders have *omnidirectional stretch*, allowing it to "give" with your every move. BioFlex lets you breathe easier and have more mobility because of its ability to stretch 20 percent larger than traditionally rigid B.C. material. Not only does this provide infinitely more comfort while wearing the B.C., it gives you *20% additional flotation* while still allowing a body hugging profile!

The OceanPro V is lined with BioFlex Velour™, a specially designed composite material with *unidirectional stretch*. This forces the bladder to inflate outwards, virtually eliminating squeeze on your chest. BioFlex Velour's velvet-like surface and engineered stretch make the OceanPro V quite simply the most comfortable B.C. you have ever worn in your life.

Try on an OceanPro V at an Authorized Oceanic Dealer. We think you'll agree that not only does BioFlex feel great, its deeply embossed panels in blue, purple, or pink look great, too!

When you're looking to fill that empty spot in your dive bag, remember the Ocean Pro V B.C. does more than give you a lift, it lets you *Be Comfortable*.

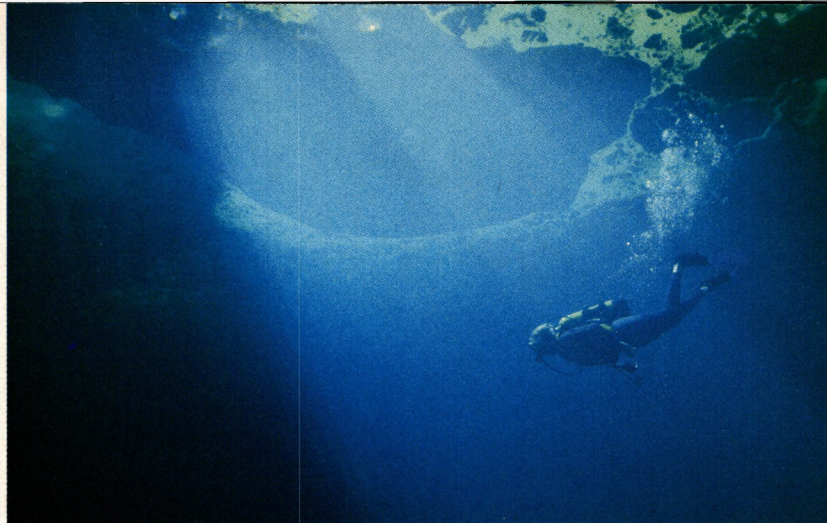


For a free copy of Oceanic's Equipment Selection Guide, visit your local Authorized Oceanic Dealer. Or send check or money order for \$5.00, along with return mailing address to: Oceanic, Dept. M, 2002 Davis Street, San Leandro, CA 94577. For VISA or Mastercard phone orders, call 510/562-0500 extension 221. You will receive an Oceanic Dive Kit consisting of a catalog, dealer listing, logo decal, and coupon worth \$5.00 towards your next Oceanic purchase.

OCEANIC
Diving Essentials Redefined

CIRCLE NO. 10 ON READER SERVICE CARD

SCUBA DIVING



T R A V E L

28 **SPRINGTIME**

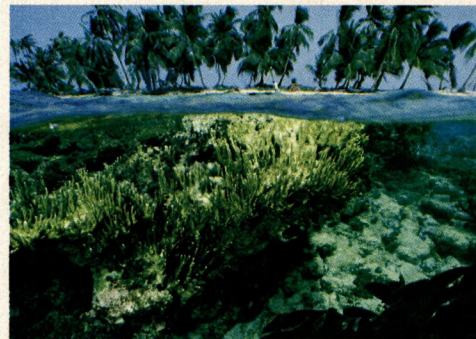
A hidden world flows beneath Florida's Panhandle and north-central region, bubbling to the surface as the greatest collection of ether-clear, freshwater springs in America. Did we mention the Fountain of Youth?
~By Buck Butler

33 **SIX-PAGE PULL-OUT MAP**

Our take-along guide to the best cave, cavern, drift and looky-here diving in Florida's Spring Country. From commercial to off-the-beaten-path, if it's diveable, it's probably here.

40 **DISCOVERY CHANNEL: SOUTHERN BELIZE**

In the mood to name a virgin dive site after yourself? Acres of never-before-dived coral compete with faro reefs, whale sharks, platoons of dolphins and howler monkeys in this most-remote section of the Belize barrier. ~By David Taylor



47 **DIVE BONAIRE: A RODALE'S SCUBA DIVING TRAVEL GUIDE**

Only one island in the world has car license plates that read "Diver's Paradise." Bone-air. Bonn-air. Heck, just get there. Here's how.

77 **WEEKENDER: SANTA CRUZ ISLAND, CALIF.**

With abalone big as hubcaps and calico bass lined up like commuters, a Santa Cruz pinnacle called Potato Rock is one spudly dive. ~By John Francis

79 **WEEKENDER: LAKE OUACHITA, ARK.**

Divers come nose-to-nose with 20-pound walleyes and 50-pound catfish in this fountainhead of "miracle waters." ~By Nick Lucey



81 **WEEKENDER: CAPE FEAR, N.C.**

The tropical life thriving in this wreck alley kissed by the Gulf Stream will have you whistling Caribbean instead of Dixie.
~By Keith Phillips

23 **TRAVEL DESK**

Do the big savings on airfares promised by consolidators also mean big headaches for the book-it-myself set? An RSD report. Also: Bonaire, baby! Dutch treats you won't believe.
~By Nick Lucey

EQUIPMENT

86 AIR TIME

Should you buy a liberal or conservative dive computer? Our ScubaLab™ team wrings out science fact from fantasy in its ground-breaking evaluation of seven air-integrated models.

~By Jon Hardy, John Brumm and Val Hodges-Palmer

19 GEAR BAG

New underwater beacon lightens your load; Good Guppy! It's professional snorkel gear for kids! Watch out for this diver-friendly timepiece; a Norbert Wu-nderful photo instruction book.



ENVIRONMENT

17 WORLD VIEW: PAVING PARADISE

Will developers destroy the reefs that divers and operators have worked so hard to save? Cozumel's Paradise Reef escaped once, but the cruise ship crews are back with a sneaky plan to pave Paradise. ~By John L. Stein

101 ASK A MARINE BIOLOGIST

Pleeze, don't squeeze the charmin' brown sponges, or you'll find out why they're called touch-me-nots. ~By Lowell P. Thomas



EDUCATION

93 ADVANCED SCUBA: AIN'T MISBEHAVIN'

Sex, food, personal hygiene—hey, fish have lives, too. Take this nine-point guide to understanding fish behavior with you on your next Caribbean vacation. ~By Doug Perrine

98 DAN NEWSLETTER: GET WET INSIDE AND OUT

Do a lot of divers get dehydrated and not know it? Yes. Is that dangerous? Definitely. Here's what to do about it. ~By Dr. Jolie Bookspan



105 Q & A: UNDER PRESSURE

How to adjust your tank and cancel your reservations for the next head-banger's ball. ~By Jon Hardy

65 PORTFOLIO: CARD SHARKS

And you thought Joe Camel was cool. In the 1930s you received His Majesty's fish cards with each pack of Players Cigarettes you bought.

Today the marine collectibles are prized as works of art. Smoked salmon, anyone?



DEPARTMENTS

6 LETTERS

Hot pens put the bite on controversial hand-feeding editorial; right- or left-hand weight-belt release: Does it really matter anymore?

10 SEAVIEW

Crocodile Rock: The Legend of Spencer Slate. Good news for gray whales—maybe. And the survey says: RSD readers take sides on hand-feeding debate. Mega-death on the Texas coast.

118 THE WATER PLANET

It's microscopic, it's white and you literally can't live without it: Welcome to the wonderful world of marine snow. ~By David H. Abrahamson

94 INDEX TO ADVERTISERS

113 DIVE TRAVEL MARKETPLACE

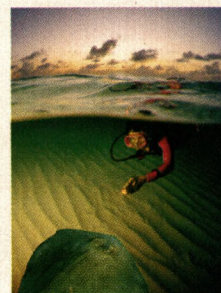
117 CLASSIFIED



DIAL-A-DIVE

How to get there and get wet in:

Florida Springs Country	Pgs. 33-38
Southern Belize	44
Bonaire	24-26, 47, 52-54
Santa Cruz Island, Calif.	78
Lake Ouachita, Ark.	80
Cape Fear, N.C.	82



On Our Cover—Photography by Chris Crumley/Earthwater Stock. Shot at Club Med, San Salvador. Model, Geri Bush. Gear courtesy Henderson, Sea Quest and U.S. Divers.

COZUMEL



This month's
special
includes:

\$415



Plaza Las Glorias
Cozumel
Hotel & Villas

CIRCLE NO. 43 ON READER SERVICE CARD

- Cozumel's premier 5-star Waterfront hotel
- All suites
- Satellite TV
- Mini Bars
- Air Conditioning
- On-site dive operation
- Walking distance to town
- Great Value!

Aqua Safari
29TH ANNIVERSARY

- 5 nights 5-star accommodations
- 3 days of 3-tank boats dives with Cozumel's most experienced dive operation
- All taxes (some restrictions pp/dbl occupancy)

For reservations
call your Cozumel experts...

Sea Safaris

800-821-6670

U.S. and Canada

(310)546-2464 • Fax (310)545-1672

LETTERS

THE MERMAID'S CURSE

I'm writing to applaud you for the article about the Miskito Indians ("Death Comes to the Mosquito Coast," July '94). This is the sort of stuff I thought I'd never see in any glossy-page scuba magazine. It takes guts to stick a human tragedy in our faces amidst all the happy articles and advertising.

LEE F. JONES
SAN JOSE, CALIF.

GOOF PROOF

Although you are certainly entitled to your opinion, we take real exception to your current editorial ("The World According to Goofy," July '94). Such page one treatments do influence and indeed shape the opinions of others.

While your cheeky creation about the Nessie Nuzzle and Jellyfish Jam-boree dives was funny and inventive, the lasting messages were that organized dives with big animals were contrived, unnatural and possibly passé.

While you may poke fun at this "Japanese restaurant menu" you might well note that Cayman's Stingray City dive, the numerous shark feeding dives throughout the Bahamas and elsewhere, our Dolphin Experience, and the various other guaranteed animal encounters involving mantas, whale sharks, et cetera are unmistakably the most popular dives in the world today.

Fundamentally what is at issue here are the realities of competition, the issue of creating attractions and, yes, "purity." Well, if we really want to pursue this to any logical conclusion, please consider the following:

Should America close all the national parks and let people encounter the bears at Yellowstone on their own terms?

Are Disney World and EPCOT

really wholesome experiences or should we extol the virtues of less artificial and commercial destinations than Orlando? (How can they lull generations into believing that nature's disease-laden rodents are fun-filled giant playmates?)

While we're at it, isn't scuba diving itself artificial and contrived? Doesn't it possibly disturb the behavior of the fish? Why not promote the ban of compressed air and encourage your readers to go back to free diving, as purists.

Of course, the reality is that as diving matures it splits into niche markets and segments and indeed becomes competitive. Some dives such as the *Rhone* may become overcrowded. Other attractions will be developed for those turned off by the large number of divers on the *Rhone* or Seven Mile Beach. That's inevitable with a growing market and diving attaining the status of a mainstream lifestyle sport.

The Bahamas has worked to take advantage of the diversity of diving amongst our dozens of islands and destinations. Big animal encounters, particularly the shark dives, are an area that we have developed to attract divers to the Bahamas. Several of us independently came to the conclusion that this is what today's diver wants.

I have personally done thousands of dives around the world. Yet every time I do a shark dive, the adrenaline still flows. Last, let's not ignore the important educational and environmental component of these dives. Shark and dolphin populations have been badly impacted by man. With these dives, people learn about the animals and often become advocates for conservation. We need to destroy those ridiculous myths about sharks.

We are not against the purity of diving. We have lots of purist diving here in the Bahamas. But promoting

CIRCLE NO. 51 ON READER SERVICE CARD

DON'T
CRACK
UNDER
PRESSURE



The 2000 series. Unidirectional turning bezel. Scratch-resistant sapphire crystal. Double protection screw-in crown. Water-resistant to 200 meters (660 feet). Stainless steel bracelet with double safety lock.



TAGHeuer
SWISS MADE SINCE 1860

ADLER'S
New Orleans, LA • (504) 523-5292

YAMRON JEWELERS
Naples, FL • (813) 261-7707

purity or needing to demonstrate witty writing is no license to ridicule these growing popular activities. We feel that you have planted a very negative and unnecessary thought in many minds. This editorial will probably be remembered as "the Goofy Editorial" for reasons other than the title.

JOHN ENGLANDER
PRESIDENT, BAHAMAS DIVING ASSOCIATION

As I read Steve Blount's "The World According to Goofy," I thought about writing a note regarding my experience with shark feedings. Then I read about your current readers' poll, and I knew I definitely had to write.

First, let me say that I'm glad I had the opportunity to see a shark feeding. In the same breath, though, I don't plan on participating in anything similar again. There were three dives—two feedings and one semi-natural encounter. The nonfeeding was probably my best dive ever. The crew may have dropped some bait, but if they did it wasn't the focus of the dive. There were probably 10 blacktips, all swimming freely near the divers. While making my safety stop, I was fortunate enough to see a lone hammerhead swim below us. Swimming with sharks in a known shark location is much more interesting than kneeling and watching them during a feeding encounter.

It was our final dive that convinced me we shouldn't be feeding the sharks. The divemaster rubbed and molested the sharks, as well as grabbed their dorsal fins, hanging on to them. Toward the end of the dive, he was surprised by a large grouper attempting to feed and he pulled the feed pole away. Unfortunately, it was directly in the line of the blacktip, who went for the bait. The pole became lodged in the shark's throat, who attempted to shake it free before swimming away over the wall. The remaining sharks quickly followed and that was the end of our dive.

Is one shark life worth it, for the enjoyment and education of numerous divers? Had the shark stayed in our area instead of swimming away, it might have turned ugly. Is one human life worth it?

ALEX LATTIN
CINCINNATI, OHIO

Our editorial was not meant as a condemnation of all animal encounters, only a call for the diving community to think about and discuss the value of such dives. It's important to note that shark encounter dives have an excellent safety record. Other than an injury to one divemaster/feeder in the Bahamas, we're not aware of a single dive traveler who has been hurt during a shark dive.

The question of whether an unplanned injury to a shark is worth the experiences and education these dives afford numerous divers is an important one. In a sense, these dives parallel topside zoos. Is it wrong to keep wild animals in zoos for our amusement? Maybe. But without zoos, very few of us would know what a rhinoceros looks like and there wouldn't be much of a constituency for saving these animals, which are currently being driven to the edge of extinction by poachers.

Likewise, without the opportunity to observe and interact with sharks, the anti-shark mania of the 1970s might have continued. Like rhinos, sharks are being slaughtered on a massive scale to satisfy markets in the Orient. Without human sympathy—perhaps created by these encounters—the shark could be headed for the endangered species list. For a look at how our readers feel on the subject, see page 15.

WEIGHTY MATTERS

It's funny how heated divers can get over the right-hand versus left-hand release for weight belt buckles.

I'm an instructor and have been diving about 25 years. I've made at least 5,000 dives, most of them in the cold, rough conditions of northern California. I've also been involved in more than my share of rescues over the years. I have yet to hear someone say, "Boy, that was a hard rescue. I couldn't figure out which way his weight belt buckle was going." Most rescuers are so hyped up they don't have a clue as to right or left. Even in practice sessions, most rescue class students can't tell. When you add in the factors of approaching from the left or right, front or rear, it becomes very confusing.

I was very pleased to read Jon Hardy has felt this way for years. I don't have a problem with teaching students to use a right-hand release, but I also don't think it's a big deal if divers choose a left-handed release so long as they are consistent and know for themselves how they're suited up.

ROGER DUNTON
SANTA CRUZ, CALIF.

I was disturbed to read that "it makes no difference which way the buckle goes" in "Weighting Is the Hardest Part" (March '94).

The reason that weight belts are a mandatory right-hand release is simply a scuba equipment manufacturing issue. Every buoyancy control device on the market has the inflator hose on the left side.

Divers who need to drop their weight belts will most likely be on the surface, in distress, with the inflator device in their left hand. During an emergency situation, it's very unlikely that a panicked diver will let go of the inflator. Therefore, the only hand available to the diver in trouble would be their right hand.

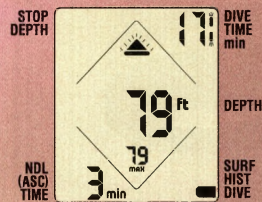
Please spread the "Right-Hand Release Is Right" message. Dive publications have a responsibility to provide safe and accurate information to their readers.

VERONICA GAGLIARDI
NEW YORK CITY

The primary purpose of ditchable weights is to make a submerged diver more buoyant and help bring them to the surface. A diver already at the surface presumably wouldn't need to drop their weights unless they have to make an unplanned long surface swim and want to lighten the load. In this case, the release is not an emergency and the left-hand/right-hand business will still not be an issue. ☺

Got something on your mind? Have we made your day or are we making you see red? Tell us about it. Send your letters to: Editor, Rodale's Scuba Diving, 6600 Abercorn St., Suite 208, Savannah, GA 31405. If we use your letter, we'll send you a Rodale's Scuba Diving T-shirt. Cool!

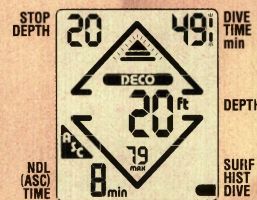
You shouldn't have to be a rocket scientist to read your dive computer.



When you're at 100 feet and running low on bottom time, the last thing

you want to do is search a cluttered computer screen for essential information. It's got to catch your attention with graphics, then exhibit data logically and clearly.

The display on SCUBAPRO's new DC-12 dive computer was developed by a human factors engineer, who also designs jet cockpits. You'll find all the data you need in a clear, intuitive array without

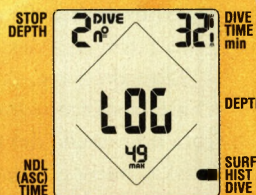


having to push buttons to access it.

Number one priority is depth, and that's always in the center, in big, bold numbers. Surrounding it are four information clusters: program status, dive time, decompression information, and limits, organized around a diamond that transforms itself into command arrows when necessary to indicate up, down, or stay.

Produced in SCUBAPRO's advanced electronics manufacturing facility, the DC-12 is an incredible value at a suggested retail price under \$300. And our global distribution means that service is available worldwide should you ever need it.

To find the SCUBAPRO dealer nearest you, call toll-free: 1-800-GO SCUBA.




SCUBAPRO®

JWA A Johnson Worldwide Associates Company
3105 E. Harcourt, Rancho Dominguez, CA 90221
CIRCLE NO. 11 ON READER SERVICE CARD

Seav

A Gray Area

 On June 15, the National Oceanic and Atmospheric Administration (NOAA) removed the California gray whale from the endangered species list. The world's farthest migrating mammal, decimated by whaling a century ago, had been on the list since 1970.

The delisting is cause for celebration, according to Commerce Secretary Ron Brown. "Two tough federal laws from the '70s—the Marine Mammal Protection Act (MMPA) and the Endangered Species Act—have helped bring this animal back from a critically low population," Brown said. Current census figures now place the gray whale population at 21,000, more than double the post-whaling number of less than 10,000.

Removing the whale from the endangered species list doesn't undermine its safety in U.S. waters, adds NOAA Assistant Secretary Douglas K. Hall. "Although the gray whale is no longer in danger of extinction," Hall notes, "it will remain safeguarded by the Marine Mammal Protection Act [and]

NOAA scientists will continue to monitor its status."

The MMPA, which is up for reauthorization by Congress this year, expressly prohibits "killing, injuring or harassing gray whales" in federal waters, "unless authorized by permit or exemption." Mexico similarly protects the whales on their way to and from their Baja California calving lagoons.

Saved or not, the gray whale is still not immune from man-made danger. In Alaska, native Indians are allowed to kill a small number of gray whales each year for sustenance under a special MMPA exemption. And for years, Russian and Japanese whalers skirted International Whaling Commission restrictions on hunting the gray whale—and other protected

whales—by taking it for "scientific study" or sustenance hunting. Predictably, whale meat sometimes still ends up on the market.

While NOAA claims delisting the gray whale as a victory, others view it as ignorant posturing. Critics include marine mammal photographer Bob Talbot: "In my opinion every animal in the ocean, and perhaps every animal on the planet, is an endangered species. To me, it's a ridiculous waste of time and money to take an animal off the endangered species list. Doing so just invites further exploitation, something we need less of rather than more of. Perhaps we should spend less time examining numbers

WHY IS THIS GRAY WHALE SMILING? PERHAPS BECAUSE HE'S JUST BEEN REMOVED FROM THE ENDANGERED LIST AFTER HIS SPECIES DOUBLED IN NUMBER.

and spend more time treating animals as neighbors rather than resources."

In recent decades Talbot—along with many other photographers, scientists and observers—has spent untold hours watching gray whales along the California coast. "Near shore, we may actually see less of them now," Talbot says. "That doesn't mean there are less; it just means they're going offshore to get away from the whale-watching boats."

—JOHN STEIN

HOWARD HALL

My Favorite Dive

For two years I'd been coming up with valid reasons for not night diving.

"Night dives cost too much."

"None of the boats will go on the night I want to go."

"It's such a hassle to come back and clean your gear late at night."

Truth was, after about 50 dives, the thought of night diving still intimidated me. But here I was, on a live-aboard in Little Cayman. The reefs were spectacular, the seas were calm, the entry was easy, and the moon was full. No excuses. So, with trepidation, I donned my gear and

the sand, its colors pink and blotchy. It bore little resemblance to the busy, yellow and white scavenger I'd seen during the day. I approached it closely and to my astonishment, it didn't dart away. A stingray rested on the bottom, covered in sand. A parrotfish slept contentedly in its mucous cocoon. Fish that had frustrated me during the day as I approached for a closer look were now within arm's length. A queen triggerfish, honeycomb cowfish and a blue-striped lizardfish all moved sluggishly in the still, dark water.

The very dive that I'd approached with so much apprehension turned out to be one of the most incredible experiences of my life.

Now when asked about my favorite dive, I always answer, "Any night dive!"

Diver:

Judy Greer, Peoria, Ill.

Age and Occupation:

43, lab technician

Diving Background:

Open-water diver,
12 years



A QUEEN TRIGGERFISH BRIGHTENS A NIGHT DIVE.

entered the water.

The black expanse from the surface to the bottom seemed daunting, but I was determined. The first thing I saw was a goatfish resting in

Get published! Send a manuscript—not to exceed 500 words—and a color slide to "My Favorite Dive," Rodale's *Scuba Diving*, 6600 Abercorn St., Suite 208, Savannah, GA 31405. If your submission is used, we'll pay you \$50.

WHAT A CROC!

Is truth stranger than fiction? Does Julia Roberts really think Lyle Lovett is gorgeous? Is O.J. Simpson being framed?

The July issue of Rodale's *Scuba Diving* had barely hit the street when our credulity was stretched to the outer limits by a note from legendary Florida Keys dive operator Spencer Slate:

"I read your column and was surprised to see your suggestion about feeding crocodiles," Slate said. "As you may know, there are still a few saltwater crocodiles in the Everglades. I've been going up there



to feed them for years."

We're not going to say we're gullible, but when playing peek-a-boo as a child, someone could put their face behind a paper plate and we thought they were in Phoenix.

Besides, the note contained convincing details that only someone who had really fed crocodiles would know. We realize that's important because we watch "Matlock" religiously.

"Crocodiles really like bonito, but if you want to get them into a frenzy, try a bag of soggy Doritos," Slate wrote. "There's something about the nacho cheese flavor that absolutely drives them wild."

Dorito-eating crocodiles? We were still skeptical.

Then we got indisputable proof: This picture of Slate, a croc and a snack-to-be.

Now our only question is why the return address on the slide reads, "KGB Film Labs, Moscow."

Mystery Deaths In Texas

Feeling stressed? Apparently, so is marine life along the Texas coast, which has been dying in waves throughout the year.

The carnage began early. From New Year's Day until the end of May, 231 bottle-nosed dolphins washed ashore, victims of a virulent viral infection. Texas usually sees 90 dead dolphins along its coast in an entire year. Between March and May—as the dolphin deaths began to taper off—250 turtles, including loggerhead, green and endangered Kemp's ridley turtles, began washing ashore. Necropsies showed they died from ailments ranging from ingestion of fishing hooks and plastic bags, to parasitic infections and boat propeller damage. A typical year along the state's coast normally sees 200 turtle deaths. As that wave began to subside, the fish kill began.

From April through June, an estimated 800,000 fish—Atlantic croaker, star-drum, silver perch, Atlantic spadefish and sea trout as well as arrow and blue crabs and some menhaden—tumbled ashore like a D-day invasion. Thankfully, the 20-mile stretch of public beach near Galveston that was

ground zero was closed. In the case of fish kills, the suspected culprit is a Texas-sized algae bloom straddling the border with Louisiana. The square-mile bloom floats 1 to 2 miles off the coast like a giant, reddish-brown amoeba.

How the bloom kills—by producing biotoxins or depleting the water's dissolved oxygen—is still a matter of speculation. Tests have shown it to contain the *gymnodinium* genus of algae—a clan that includes biotoxin-packing dinoflagellates, the culprits behind red tides. However, specific tests for the dinoflagellates have been inconclusive. The bloom itself puzzles scientists. Not only is it far larger than it should be, it's breaking all the rules. Most blooms are short-lived proliferations of one algae type that occur when nutrients, salinity and temperatures are just right. The Texas bloom,

however, is a soup of different algae that continues to thrive in an area with low nutrient levels.

Even if scientists solve the

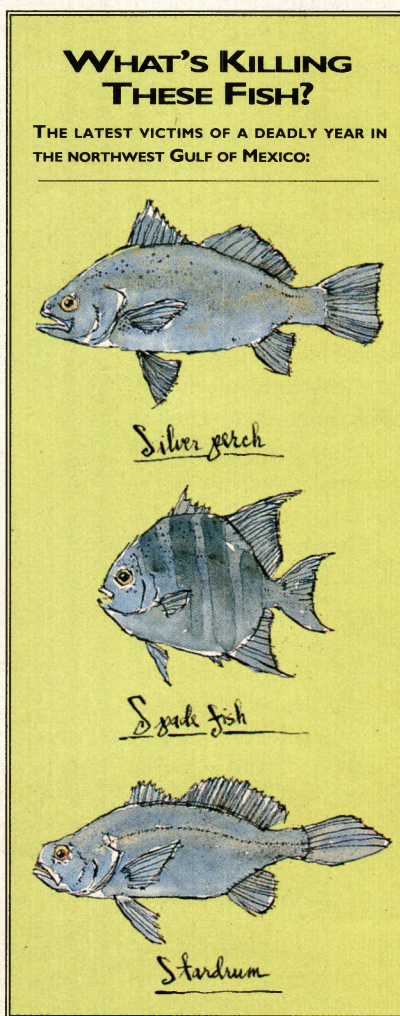
lems,” says Winston Denton, a contaminants biologist with the Texas Parks and Wildlife Department.

Contaminated fish—whether from biotoxins or man-made pollution—are one possible cause for the turtle deaths. One theory has turtles eating the dead fish then getting ill or becoming so weakened that they can't fight off other diseases, escape physical danger or negotiate turtle excluder devices, says Dr. Roger Zimmerman, director of the National Marine Fisheries Service lab at Galveston.

The dolphin die-off, largely attributed to an outbreak of a measles-like virus, was probably independent of the fish and turtle kills, says Dr. Graham Worthy of Texas A&M University and the Texas Marine Mammal Stranding Network. The airborne virus is specific to mammals.

So are the three events connected by anything other than bad timing? Maybe, says Zimmerman. One theory is that all the marine life in the northwest Gulf of Mexico is stressed by man-made pollution—particularly pesticide and herbicide runoff escalated by Mississippi River flooding—leaving them vulnerable to a wide range of ailments and physical threats.

“We know we have some stressful conditions in the northwest Gulf of Mexico and that stressful conditions can impact the ability of dolphins, fish and turtles to survive,” Zimmerman says. —KEITH PHILLIPS



*A mollusk museum celebrates
our fine, footed friends.*

Mollusks: A Retrospective

What did Cleopatra, Alexander the Great and Julius Caesar have in common? They each draped themselves in robes dyed royal Tyrian purple and doled out harsh sentences to commoners who had the audacity to do the same.

That scintillating tidbit comes from the exhibit "Royal Tyrian Purple"—the name of a dye derived from the seafaring murex shell—at the nation's first museum dedicated solely to mollusks, the Bailey-Matthews Shell Museum on Florida's Sanibel Island. Far from being your average tourist shell shack, the museum (due to open in March) will highlight mollusks in a scholarly context usually reserved for the presentation of fine arts or history. Other exhibits include:

► "Mollusks, Medicine and Mankind," a look at the physiological impact mollusks have had on humans. For example, each year 150,000 people in developing countries die from schistosomiasis, or blood fluke disease,

which is carried by a parasite that travels in five kinds of freshwater snails around the world. On a more playful note, the exhibit also



SHELL GAME: THE BAILEY MATTHEWS SHELL MUSEUM ON FLORIDA'S SANIBEL ISLAND WILL HOUSE ABOUT 15,000 SPECIES OF MOLLUSKS.

attempts to answer an age-old question: does oyster consumption really rev up the male sex drive?

► "Sailors' Valentines," a cross-cultural display involving European whaling fleets and the natives of Barbados during the 19th century. Sailors would often stop by the islands on their way home from the South Atlantic to pur-



chase small, octagonal boxes intricately crafted with hun-

dreds of tiny shells that spelled out "I love you" and other syrupy sayings.

"There are more living marine mollusks than all of the other animals in the ocean," says R. Tucker Abbott, the museum's Harvard-trained director and one of the nation's foremost malacologists. "People have been using them for cen-

turies." The 100,000-plus species of marine, freshwater and land mollusks come in three types—snails, bivalves and nautilus. Abbott, who formerly supervised the mollusk collection at the Smithsonian Institution, says Sanibel's three-story museum will open with about 15,000 species.

And what about oysters as aphrodisiac? "I don't know if that's true or not," admits Abbott, "but I doubt it." —PAUL KVINTA

If you would like to donate to the Bailey-Matthews Shell Museum's exhibit fund, call (813) 395-2233.

SOUNDINGS



BIG DRINK

The world's oceans contain more than 300 million cubic miles of water.



IMMACULATE CONCEPTION

Female reproduction without male fertilization (parthenogenesis) is possible for some marine species, including planktonic crustaceans.



MR. BIG HEAD

A sperm whale's head constitutes one-third the length of its body.



REDWOODS OF THE SEA

Giant kelp can grow to more than 165 feet in length.

Bonaire Video Challenge

They came, they saw, they rolled tape. And when the editing was done, the 84 participants in the first Great Bonaire Underwater Video Challenge took home nifty prizes and treasured underwater footage. Grand Prize winner Aldo Thomaz, Jr., of Santa Andre, Brazil, will return to Bonaire courtesy of his prize: an all-expense-paid, one-week dive vacation at Captain Don's Habitat. Second prize, a complete Ikelite Marine Video System, went to Jorge Issamu Kawamura of Sao Paulo,

Brazil. Kenny Treadway of Kenner, La., took home third place and a U.S. Divers Micra regulator, Alcyone BC and Data Pro depth and pressure gauge console. Fourth place winner, Leon Klein of Alexandria, Va., received an Ikelite Aquashot housing for disposable cameras as well as other photo gear. Bonaire resident Barry Gassert won fifth place and an SSA Vega 3000 wetsuit.

The contest, sponsored by Rodale's Scuba Diving, Captain Don's Habitat, Ikelite, U.S. Divers, Sports Suits

of Australia and Darlexx, was judged by famed underwater videographer Stan Waterman and representa-

an annual event. Next year's Bonaire challenge will be held April 22-29. Look in future issues for the dates and locations of other video challenges sponsored by RSD in 1995.



tives of Ikelite. The contest, judged a success by contestants and sponsors, will be

OK, EVERYBODY SAY, "CAMCORDER!" CONTESTANTS IN THE GREAT BONAIRE UNDERWATER VIDEO CHALLENGE.

LEGISLATIVE ACTION CARD

Location	Action	Purpose	Current Status	Next Steps	What You Can Do
California	U.S. Navy "Ship Shock" testing	The U.S. Navy is conducting explosive "ship shock" testing in Southern California waters to simulate battle conditions for new destroyers. Environmentalists argued that the tests would harass and kill marine mammals and other sea life.	After the Natural Resources Defense Council and other environmental groups sued NOAA and the Navy last winter, an agreement was reached to conduct testing in a more remote area of the Navy Warfare Center. NOAA reports that testing was conducted last spring with NRDC observers present and with no loss of marine life.	Testing will continue according to the terms and conditions of the Navy's NOAA-issued permits—with National Resources Defense Council observers present.	For more information, contact the Natural Resources Defense Council, 40 West 20th St., New York, NY 10011; (212) 727-2700.
Florida	Save Our Everglades ballot initiative	Through a ballot initiative, the environmental group Save Our Everglades had planned to make the Florida sugar industry pay one cent per pound of sugar produced to clean up agriculture-caused pollution in the Everglades.	Save Our Everglades gathered 600,000 petition signatures to place their initiative on the Florida ballot, but in June 1994 the group initiative was rejected by the state supreme court. The reason cited was that the initiative did not focus on "a single issue." Instead, the existing \$1 billion Everglades Forever Act will make Florida residents share cleanup costs with Big Sugar.	Save Our Everglades is planning to evolve into a political action committee to continue its efforts to clean up the Everglades and Florida waters. Under the existing plan, clean water will not flow through the Everglades until 2013.	Save Our Everglades needs volunteers to help build membership, acquire donations and assist political candidates. Contact Save Our Everglades, 1999 West Colonial Dr., Suite 201, Orlando, FL 32804; (407) 872-8558.
All states	Reauthorization of federal Clean Water Act	The Clean Water Act protects virtually all the nation's waterways: inland, coastal and underground. It is scheduled for modification and reauthorization in 1994.	At press time, the House of Representatives was debating the bill's wetlands provisions, along with those for non-point source pollution (e.g., agricultural and urban runoff). Simultaneously, American Oceans Campaign was lobbying for the Clean Water Act to include AOC's "BEACH" bill, which was designed to improve the water quality at public beaches.	The Clean Water Act and the BEACH bill were scheduled to be marked up by various committees during summer 1994. After earning approval from the House and Senate, the president is expected to sign the reauthorized bill.	American Oceans Campaign encourages divers to contact their congressmen and senators in support of a strong Clean Water Act and BEACH bill. You can contact the appropriate officials for \$6 via a special Western Union telegraph service. Call (800) 258-2222 and ask for "Hotline 1000." You don't even have to know the names of your representatives, just your zip code.
All states	Reauthorization of federal Marine Mammal Protection Act	After 24 years, the most comprehensive protection ever written for America's marine mammals was due for reauthorization in 1994.	The Marine Mammal Protection Act was quietly reauthorized by Congress in spring 1994. One change: Most of the authority for captive marine mammals has been redirected to the Animal and Plant Health Inspection Service.	The successful reauthorization of the bill eliminates the need for additional political steps.	To receive a copy of the reauthorized Marine Mammal Protection Act, mail a written request to the Office of Public Affairs, National Oceanic and Atmospheric Administration, 1305 East-West Hwy., Silver Spring, MD 20910.

READER POLL RESULTS

Hand Feeding

Our July reader poll on hand-feeding animals came close to topping our controversial spearfishing poll for number of responses. In the end, the voting was close, but those opposed to hand-feeding edged out supporters of the practice.

Here's a sampling of quotes from our comment line showing why you voted as you did:

► "I've been diving for about eight years and what I'm into now is interacting with animals. I got tired of going down and looking at coral, so I firmly support interacting with animals."

► "I'm strictly against the hand-feeding of animals. Hand-fed animals become more aggressive each year and I'm sure there are going to be injuries. It's time to put a stop to it before it goes too far."

► "I feel that there's no problem with feeding fish to attract their attention. I don't think it's going to give them a false food source. If that

were the case, all the ones who didn't get the handout would already be dead."

► "I believe hand-feeding interferes with nature's balance and natural selection. Let nature take its course."

► "I think it's important for divers to be able to

Results of Question:

Do you support the hand-feeding of animals in order to create an attraction for divers?

Yes: 42%
No: 58%

interact with animals in the ocean to get a feel for the types of encounters they normally wouldn't be able to get."

► "I think hand feeding fish and sharks is ridiculous. Didn't we learn anything from feeding the bears at Yellowstone?"

Finally, there was one response that seemed to crystallize the issue and the competing arguments:

► "I don't think we should turn wild animals into circus performers, yet when I go diving, that's exactly what I want to see. I just hope that one of these days, we'll all get the right idea."

READER POLL

Buddy Breathing: Last Gasp?

The last few years have seen growing concern within the diving community that "buddy breathing" (sharing a single air source in a dependent out-of-air emergency) is outdated. Today, most training agencies—including IDEA, NASDS, NAUI, PADI, PDIC and SSI—do not require entry-level students to learn buddy breathing. But they do, in most cases, allow individual instructors to teach buddy breathing if they choose. The YMCA still requires the skill to be taught.

Opponents of mandatory buddy breathing instruction say the procedure is difficult and confusing to students and that the wide use of alternate air sources, octopuses and pony bottles makes buddy breathing a thing of the past. Most students who do learn it, they say, are no

longer sufficiently proficient within a few months following certification to use buddy breathing safely in a real emergency. The time spent teaching it, opponents argue, would be better used reinforcing other skills, especially sharing an alternate air source.

Advocates for the teaching of buddy breathing point to the reality of out-of-air situations: Emergencies do happen and divers need to be prepared. In some destinations outside of the United States and the Caribbean, diving without an alternate air source is quite common. For divers in those countries, buddy breathing is accepted procedure in an out-of-air emergency. Since most entry-level courses certify students with internationally accepted C-cards, students should be trained accordingly. There is also the "last resort" argument: though unlikely to be needed, why not have this skill as a back-up, just in case? Although buddy breathing might be difficult to master, with good instruction it is learnable. To be on the safe side, buddy breathing can be simulated during teaching by using two second stages.

We at Rodale's Scuba Diving want to know your opinion on the teaching of buddy breathing. Is it a crucial back-up skill or an unnecessary and potentially dangerous training exercise?

Should mastery of buddy breathing be required for entry-level certification?

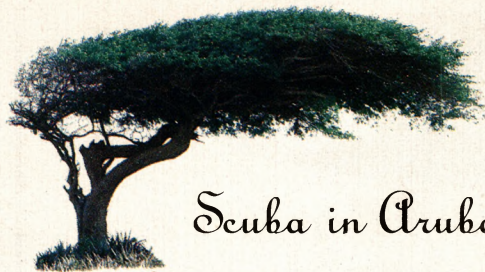
DIAL (800) DIVE-LINE (800-348-3546)

Follow the recorded instructions to vote.

Results will be forwarded to all major training agencies.



WAYNE VINCENT



Dive into our turquoise seas
and discover Aruba's
underwater wonders.

Scuba in Aruba. Explore the depths of your imagination.

© 1993 Aruba Tourism Authority



Imagine
a multitude of
virgin reefs,
choice dive sites,
and drop-offs for
divers of all levels.
And nowhere in all the
Caribbean will you find
more underwater wrecks
to explore.
Interested? See your
travel agent or call
1-800-TO-ARUBA.

CIRCLE NO. 58 ON READER SERVICE CARD



**S.E.A. SCUBA
IS A NAUI PRO FACILITY &
PADI TRAINING CENTER**

OFFERING DIVING,
INSTRUCTION, SALES &
SERVICE. 40 FT. DIVE BOAT
AND COMPLETE SCUBA
SHOP ARE LOCATED AT
HARBOUR TOWN MARKET.

**DIVING & HOTEL PKGS
AVAILABLE. CALL**
0112978-34877, FAX
0112978-34875, IN U.S.
800-450-2084

CIRCLE NO. 72 ON READER SERVICE CARD

LET US TANK YOU UP!

- * Guided Dives on all wrecks & reefs
- * 40' Dive Boat
- * Equipment & Camera Rental
- * Full watersports facility
- * PADI Dive Center
- * Dive/Hotel Packages

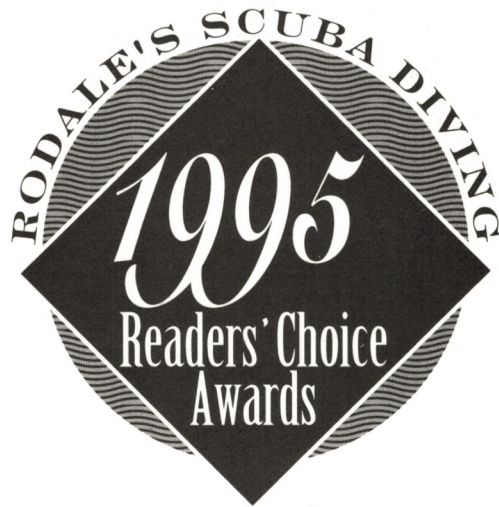


For Reservations Call
Tel: (800) 345-2782 **USA & Canada** or (305) 427-
5488 **FAX:** (305) 427-7481 For on-site Dive Info:
Tel/Fax: 011-2978-60096



CIRCLE NO. 57 ON READER SERVICE CARD

A R U B A *An island all your own*



Tired of other people telling you what they think? Have your own opinions about the best dive sites and destinations? Of course you do. And we want to know what they are.

Attached is your official ballot for the *Rodale's Scuba Diving* 1995 Readers' Choice Awards.

Although the diving business gives out many awards—like our Robert Rodale Environmental Achievement Award—no one has ever asked you, the diver, to rate the businesses and destinations your money supports. This is your chance.

Here's how it works: You pick the destinations, operators, live-aboards and retailers who work the hardest to make your diving more fun and we'll report the results in our January/February issue. Just put your hand on the ballot and follow these three easy steps:

RIP IT OUT. MARK IT UP. MAIL IT OFF.

We're even paying the postage so you can get your two cents in without spending a penny.

Please vote only for retailers, dive shops, destinations, operators and dive sites you've had personal experience with.

And while we can't promise that Ed McMahon will come to your door to give you a big check, we can promise that the industry will be listening. So go ahead. Tell 'em what *you* think.





SCUBA DIVING® WANTS TO KNOW WHAT YOU THINK!

Lots of places claim to be the best, but we want to know who, what and where rates highest with *you*. We'll report your answers in the January/February issue. Just return this postage-paid card with your votes. Please write legibly and when you give the name of a place, be sure to tell us what state, island or country it's in. Sorry, photocopies or facsimiles of this ballot will not be accepted.

WHAT IS YOUR FAVORITE RESORT OR DIVE OPERATOR?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS YOUR FAVORITE REEF DIVE (REEF AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS YOUR FAVORITE WRECK DIVE (WRECK AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS YOUR FAVORITE WALL DIVE (WALL AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

SECOND FOLD DOWN ▼

WHERE IS YOUR FAVORITE NIGHT DIVE (SITE AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS YOUR FAVORITE DOLPHIN DIVE (OPERATOR/RESORT AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS YOUR FAVORITE DRIFT DIVE (SITE AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS YOUR FAVORITE FRESHWATER DIVE (SITE AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS YOUR FAVORITE SHARK DIVE (OPERATOR/RESORT AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS YOUR FAVORITE ANIMAL ENCOUNTER DIVE (OPERATOR/RESORT AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

FIRST FOLD UP ▲

WHERE IS YOUR FAVORITE BEGINNER DIVE (SITE AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS YOUR FAVORITE PLACE TO SNORKEL (SITE AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS YOUR FAVORITE ADVANCED DIVE (SITE AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS YOUR FAVORITE SITE FOR PHOTOGRAPHY?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS YOUR FAVORITE SHORE DIVE (SITE AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHAT IS YOUR FAVORITE DAY BOAT (OPERATOR AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

B U S I N E S S R E P L Y M A I L

FIRST CLASS MAIL PERMIT NO. 949 SAVANNAH, GA

POSTAGE WILL BE PAID BY ADDRESSEE

Rodale's
SCUBA DIVING®

6600 ABERCORN ST., STE. 208
SAVANNAH, GA 31405-9905



WHAT IS YOUR FAVORITE LIVE-ABOARD DIVE BOAT (NAME OF BOAT AND AREA)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

LIVE-ABOARD DIVE BOAT WITH BEST FOOD (NAME OF BOAT AND AREA)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

MOST ENVIRONMENTALLY SENSITIVE DESTINATION?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

MOST ENVIRONMENTALLY SENSITIVE RESORT OR LIVE-ABOARD?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

BEST PLACE TO TAKE A FAMILY DIVE TRIP (RESORT OR OPERATOR AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

BEST PLACE TO SEE BIG ANIMALS (SITE AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHERE IS THE EASIEST/MOST CONVENIENT DIVING (RESORT OR OPERATOR AND LOCATION)?

United States _____
Caribbean _____
Pacific _____
Elsewhere _____

WHO ARE YOUR THREE FAVORITE PHOTO PROS/GUIDES?

1. _____
2. _____
3. _____

WHO ARE YOUR THREE FAVORITE DIVE TRAVEL SPECIALISTS/WHOLESALERS?

1. _____
2. _____
3. _____

WHO ARE YOUR THREE FAVORITE DIVE SHOPS/RETAILERS?

1. _____
2. _____
3. _____

PAVING PARADISE

BY JOHN L. STEIN

Last year we nearly lost one of Cozumel's best-loved dive sites—Paradise Reef. The shallow reef, located 200 yards from shore and home to a healthy population of corals, invertebrates and reef fishes, had been earmarked for a new pier which would double the number of cruise ships stopping at the island.

Pave paradise, put up a parking lot.

Thwarted by negative publicity and a government veto last year, the pier project was stopped. But like the Terminator, it promises to be back. One possibility is that the new pier will be built at Lobster Point, a more remote site south of San Miguel where less coral exists. Another possibility is that the marine park protecting Paradise Reef and other Cozumel reefs will be officially downsized, thus allowing the pier to be built at the original site. Conveniently, land adjacent to the pier could then be used for a 5,000-room hotel and a new shopping center.

But why destroy nature in order to deliver tourists to her doorstep? For the investors backing this and other Yucatan Peninsula tourism projects, the answer apparently is measured in pesos, not common sense. Says Cozumel dive shop owner and environmentalist Juan Leca, "The government wants Cozumel to become like Cancun. But why build more hotels when they [existing hotels] don't have enough business already? Cozumel should be a national park. We can draw a lot of tourists if we preserve it."

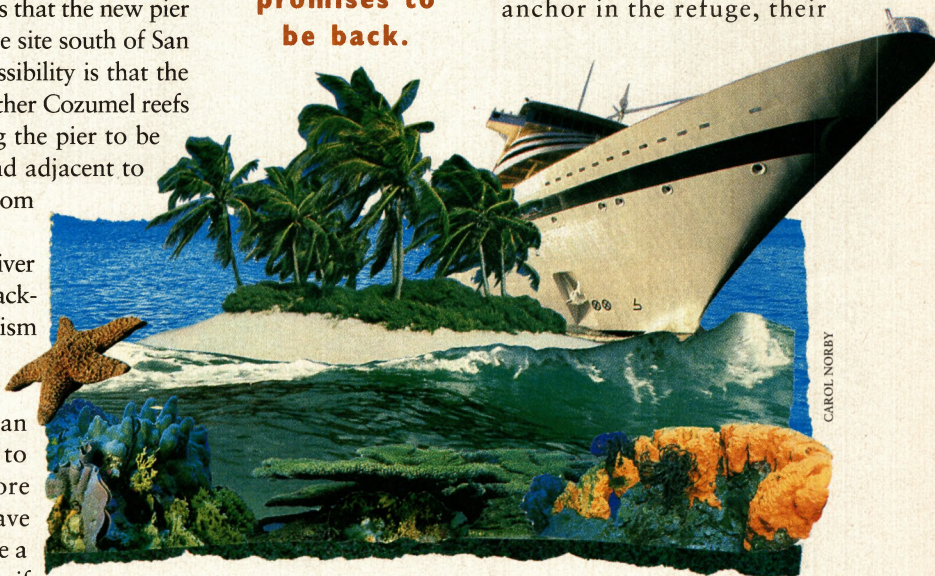
Leca wonders where the resources will come from to support the new hotel and stores. Cozumel, although Mexico's largest island, has few natural resources to call its own. Virtually all food and supplies must be delivered by boat, and a desalination plant is already needed to make enough fresh water. Worse, says Leca, Cozumel has virtually no sewage treatment facilities; raw sewage is discharged directly into inland lagoons

or into the sea. Another dive shop owner, Bill Horn, says wryly, "We're lucky we have a water shortage." But he's well aware that development may be only a legislative session away.

"I'm sure the developers will try to get [the pier] done before this government is out in December," says Horn. "By then we'll have a new president and a new cabinet, and anything can happen."

They have already built the Diamond Hotel [adjacent to Palancar Reef]. Now there's a fence on the beach there, and there are fears that there's going to be a golf course. We really need to get the refuge protected. When cruise ships anchor in the refuge, their

**The Cozumel
cruise ship pier
was stopped,
but like the
Terminator, it
promises to
be back.**



CAROL NORRIS

anchors cut a swath 30 feet across."

Leca thinks the only way to permanently defeat the developer may be to sink a religious statue, à la John Pennekamp's "Christ of the Abyss." "In Mexico, religion can be more powerful than business," he says.

Maybe a statue would also ward off poachers. "Everyone knows you aren't supposed to fish in the park, but nobody patrols it," explains Leca. "When we see someone fishing, the

fishing department doesn't want to know about it. We call the Navy, but by the time the Navy gets to where the fishermen are, it's too late."

Developers argue that despite the poaching and the existence of one major pier, many of Cozumel's reefs are still healthy. It's been noted by no less authority than the United Nations Environmental Programme that poverty brings poor environmental stewardship, whereas cruise lines

bring passengers who spend money. Leca counters that new development controlled by outside investors will actually siphon money away from the Cozumel economy.

In any event, do developers believe that a big cruise ship can nuzzle into a pier, disgorge its load of passengers for a day and then disappear without leaving a trace? Along with the ship come air and noise pollution, bilge, head or chemical waste, and an expanded land-

based infrastructure. Also of concern is that siltation from pier development and the big ship's prop may smother the reef. The scientific community widely recognizes that sediment from construction or urbanization damages reefs. A Brazilian study on the affects of tourism found that sedimentation is the principal cause of long-term stress to local reefs.

We all know of wild and beautiful places that have been effectively destroyed to make room for tourists. In Dana Point, Calif., a superb natural surfing break was demolished to build a harbor and shops. In Bequia, enormous mounds of trash, including discarded conch shells, line the northern end of Admiralty Bay.

Mitigating further damage to reefs can only occur after careful introspection. Largely, the dive industry has worked diligently to lessen its impact by installing mooring buoys, teaching divers to look but don't touch, rotating dive sites and lobbying for marine parks or preserves.

Some of these practices aren't possible in Cozumel, where the strong currents mean drift diving; there are no buoys to automatically limit the number of dive boats at a given site. "At Santa Rosa," explains Juan Leca, "there can be 10 to 15 boats with 10 or more people each. That's 150 or more divers on one reef. We have to organize, split the diving so that some reefs aren't empty while others are full."

The challenge is to find a sustainable level of use that doesn't destroy natural systems. How? Learn about the issues affecting your favorite dive spot—and then apply your efforts to help. If that site happens to be Cozumel, the dive operators there have one suggestion: write a letter. Here are the contacts:

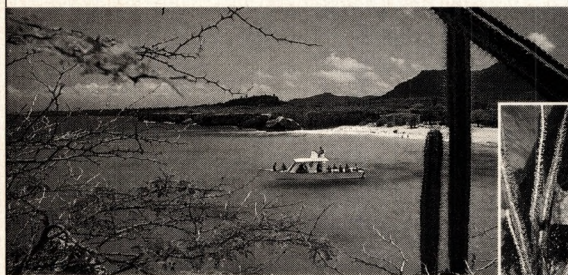
Cecilio Hernandez, Mexican Government Tourist Office, 10100 Santa Monica Blvd., Suite 224, Los Angeles, CA 90067

Mickey Kantor, U.S. Trade Representative, 600 17th St. NW, Washington, D.C. 20506

Bill Horn, Aqua Safari, Cozumel, Mexico, fax: 011-52-9872-0661

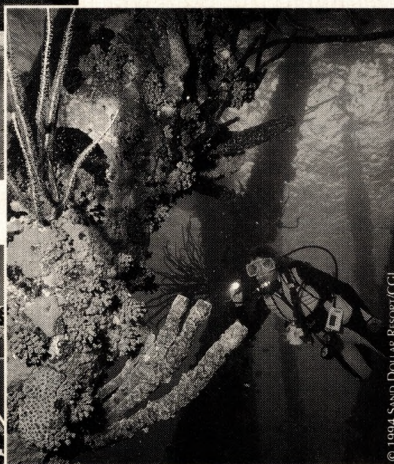
John L. Stein is founder of Terra Firma Publishing, a Santa Barbara-based book firm.

LET SAND DOLLAR TAKE THE WORK OUT OF YOUR NEXT DIVE VACATION



No rush. No fuss.

No lifting. No lugging.



No hurry. No worry.

DIVING IS EASY AT SAND DOLLAR IN BONAIRE.

SAND DOLLAR CONDOMINIUMS AND BEACH CLUB is very serious about the rules – the *relaxation rules*, that is. When you go on a dive vacation, the last thing you want to do is work. Everything at SAND DOLLAR DIVE & PHOTO is centrally located, right on the dock; full-service photo/video facilities, dive retail store and guest equipment storage. Our friendly, professional staff operates a flexible dive boat schedule, allowing you to dive at your convenience. SAND DOLLAR is Bonaire's most complete dive resort; great diving, superior dive facilities, GREEN PARROT restaurant and premiere accommodations. Take the work out of your next dive vacation and enjoy world-class diving at SAND DOLLAR.

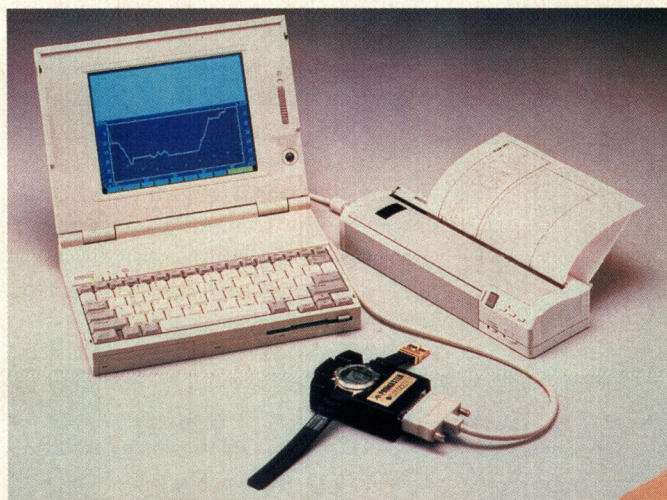
SAND DOLLAR CONDOMINIUMS & BEACH CLUB
1-800-288-4773 OR 1-800-766-6016

CIRCLE NO. 50 ON READER SERVICE CARD

GEAR BAG

New—and Unusual—Products

A dive watch that boots up and keeps on ticking; creatures that look like parrotfish but expand like puffers.



In the bag: Sealife's fish bags, \$19.95 and \$39.95 (top); Citizen's Hyper Aqualand quartz watch is a real know-it-all, \$495 (left); Guppy Gear—mask, snorkel and fins, \$60—makes snorkeling child's play (right).

KID PRO QUO

Just in time for end-of-summer fun, your kids can now have professional quality snorkeling equipment that really fits and works.

Manufactured by Marine Sports Designs, Guppy Gear is snorkeling equipment for the mini-pro ages 5 to 13. Guppy Glider fins, Guppy Goggles mask and Guppy Gills snorkel come in a variety of colors designed to delight most children.

The mask consists of clear silicone rubber, split strap, adjustment buckles and a tempered glass lens. Fins come in small, medium and large and have a simple pull-strap adjustment with a swivel buckle—and they float in salt water. The fins come with their own plastic and mesh



JOSEPH BYRD

carrying bag, big enough to also hold a Guppy Gear mask and snorkel along with other beach accessories. The snorkel has a silicone mouthpiece with a swivel for comfort and adjustability. The mask and snorkel come in five colors (blue, black, pink, white and yellow) and the fins in four (blue, black, pink and yellow).

Along with the purchase of this equipment comes the responsibility of the adult to ensure that the child has proper supervision and training in the use of it.

As with all diving equipment, ScubaLab™ recommends instruction in its use.

Suggested retail price for the mask, snorkel and fins is \$60. For your local distributor call MARINE SPORT DESIGNS at (708) 215-8553. —LORRAINE B. SADLER

PACK YOUR (FISH) BAGS

SeaLife's new tropical fish-shaped gear bags are both fun and practical.

Made from a durable blend of nylon and lycra and padded for dura-



Dive Rite's Neutralite Mini-12 puts light where you need it, \$595.

bility, these bags are designed to carry anything from wallets to snorkeling gear. They also come with an adjustable nylon carrying strap.

Suggested list price for a 12-inch bag is \$19.95 and \$39.95 for a 24-inch bag. For information, call PIONEER RESEARCH, (609) 854-2424.

LIGHT UP

Underwater lights have always had one problem: providing high-intensity lighting without bulky, awkward equipment. Today's lightweight systems are beginning to take the bulk out of battery packs. A recent addition to this field is the Neutralite Mini-12.

Manufactured by Dive Rite Manufacturing, this medium- to high-power light system is suitable for die-hard night divers and videographers alike. The large battery pack provides power through a long cord attached to a slender flashlight that can be mounted to the hand, helmet or gear.

The system operates on a rechargeable 12-volt battery in a 6-inch by 4.5-inch by 8-inch case that weighs about 13 pounds out of the water or negative 5 pounds in salt water. The light head is activated by twisting the handle or by a toggle switch on the battery compartment, depending on the model. Burn time ranges from 35 minutes to 210 minutes, depending on the bulb and light head used. Choices include a narrow, fixed-focus beam, a narrow beam with a variety of bulbs for videotaping, and a head with a variable-angle beam.

ScubaLab™ testing found mounting the system on the scuba unit, as called for, to be somewhat awkward. So we replaced a 5-pound weight on the weight belt with the battery case and found this to be comfortable as long as the unit is carefully positioned to avoid interfering with tank or arm movement. Attaching the battery pack to the BC mounting

FLORIDA SPRINGS

The clear vacation choice

The perfect choice for safe, convenient certification dives or exploring world-class caves and caverns.

Plus camping and riversports for the whole family.



AMERICAN PRO DIVING CENTER-CRYSTAL RIVER
Guided tours of all springs and
Manatee snorkel/dive tours
1-800-291-DIVE

CIRCLE NO. 56 ON READER SERVICE CARD

VORTEX SPRINGS - PONCE DE LEON
Panhandle spring diving at its best
800-342-0640

CIRCLE NO. 77 ON READER SERVICE CARD

GINNIE SPRINGS - HIGH SPRINGS
World famous cave & cavern diving
Voted #1 freshwater dive in US by
Rodale readers
800-874-8571

CIRCLE NO. 69 ON READER SERVICE CARD

BLUE GROTTO - WILLISTON
200' visibility at Florida's
best freshwater dive
904-528-5770

CIRCLE NO. 61 ON READER SERVICE CARD

DEVIL'S DEN - WILLISTON
Florida's prehistoric spring
904-528-3344

CIRCLE NO. 66 ON READER SERVICE CARD

BIRDS UNDERWATER - CRYSTAL RIVER
Manatee snorkel tours and
technical diving institute
904-563-2763

CIRCLE NO. 60 ON READER SERVICE CARD

THE CAYMAN ISLANDS OURS & YOURS



Shallow & deep. Wrecks & walls.
Beginner & advanced.

The choice is yours when
you dive the majestic waters of
The Cayman Islands.

Explore our more than 200 dive
sites teeming with marine life.

Exotic fish. Swaying sea plumes.
Playful stingrays. Shimmering coral.
All flourishing beneath our clear,
protected waters.

Onshore, enjoy golf, tennis,
shopping, sightseeing and the
most charming people in the
British Caribbean.



To fly here on a comfortable
Cayman Airways jet, call your travel
agent or 1-800-G-CAYMAN.

For more information, call
1-800-346-3313.

Come dive Grand Cayman,
Cayman Brac and Little Cayman.
And discover our underwater world
that is safe, spectacular and
yours to share.



"Those who dive us,
love us."

CIRCLE NO. 88 ON READER SERVICE CARD

strap requires placing the unit off-center. We also tried mounting it to the tank with a separate strap below the BC. While we found this to be comfortable, it added bulk on the back of the tank.

Finally, we found that while the instructions are generally clear, they provide insufficient coverage of mounting options and incomplete information on available accessories.

The Neutralite Mini-12 is available from your local dive store at a suggested

retail price of \$595. Call DIVE RITE MANUFACTURING at (904) 752-1087 for the dealer nearest you. —LISTA DUREN

WATCH OUT

The Citizen Watch Co.'s new Hyper Aqualand quartz watch can almost double as a dive console, sporting features such as a dive log, computer download capability, digital display and an electronic depth gauge. Although this unit has a computer

memory it is *not* a dive computer that calculates decompression status.

In addition to recalling the dives on the watch screen, the Aqualand can be downloaded to a personal computer. Also logged are the depth every 5 seconds and temperature every 5 minutes. Dives are numbered one through nine, with up to 30 dives in memory, but no time parameters are given. The software also allows you to print out a hard copy of your dive and the accompanying information. Changing the battery, which has an average life of 3 years, is by authorized repair centers only.

The Hyper Aqualand does require more than a few minutes of your time to understand and use properly. Though it has some minor problems, especially with PC compatibility, if those are remedied, it could truly be a watch with a future.

Suggested retail price is \$495, and is available from your local CITIZEN WATCH CO. dealer.—LORRAINE B. SADLER

PHOTO-FINISH

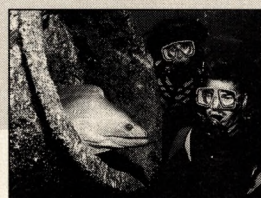
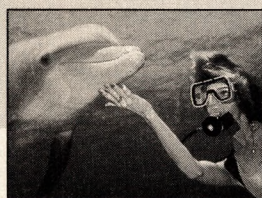
Achieving striking underwater photos requires more than just a good camera and cooperative marine life. In *How To Photograph Underwater*, noted underwater photographer Norbert Wu uses an anecdotal approach in presenting the unique aspects of aquatic photography.

Wu's book is colorfully illustrated with photographs and includes chapters devoted to lighting, composition and fundamentals of photography. Topics covered for advanced photographers include pushing film speed, over/under shots and advanced flash techniques. For the aspiring freelance photographer, there is a chapter that addresses organizing and selling photographs.

The book retails for \$16.95 and is available in bookstores or from STACK-POLE BOOKS, (800) 732-3669. ☺

In the August issue's gear reviews we said that WEH Inc.'s Humidive did not fit properly into regulator mouthpieces. The Humidive is designed to fit a manufacturer-provided mouthpiece that the ScubaLab™ team did not receive. Rodale's Scuba Diving regrets the error. The ScubaLab™ team will retest the Humidive with the proper mouthpiece and report on it in the December issue.

GREAT DIVES... RESORT... FUN!



You Get It All On A Radisson Resort Dive Vacation

If 24-hour fun is your idea of a great dive vacation, don't settle for anything less. The Underwater Explorers Society and the Radisson Lucaya Beach Resort invite you to discover Grand Bahama Island.

Dive with playful Dolphins, experience a heart-pounding shark feeding dive, meet the resident eel at Theo's Wreck or explore our colorful coral reefs...go topside and swim, golf, parasail or bask beneath the warm Bahamian sun til the evening action really begins. At the Radisson, nighttime means party time with dazzling island theme nights and three restaurants and lounges.

Enjoy all the fun of a Radisson Resort dive vacation, only footsteps away from the lively Lucayan Casino and exciting Port Lucaya Marketplace with duty-free shopping and nightly entertainment.

Call for reservations today!



Mention this ad and we'll send you a certificate for a free dive on the beautiful Grand Bahama reefs! Allow 3-4 weeks for processing.

HOTEL/DIVE PACKAGES

THE WORKS
\$619*

8 DAYS/7 NIGHTS
Includes 8 Reef Dives, Shark Dive, Dolphin Dive and a Night Dive.

LEARN TO DIVE
\$219*

4 DAYS/3 NIGHTS
Includes 3 hour Learn to Dive course and 2 dives.

1-800-992-DIVE

Or (305)351-9889

UNDERWATER EXPLORERS SOCIETY



U N E X S O

Radisson
LUCAYA BEACH
RESORT

GRAND BAHAMA ISLAND, THE BAHAMAS
OPERATED BY THE MYERS GROUP

*prices pp/dbl occupancy, effective thru 12/21/94. Rates subject to change.

CIRCLE NO. 55 ON READER SERVICE CARD

FRUGAL FLIGHT

BY NICK LUCEY

In the never-ending quest to find cheap airfare, more and more dive travel consumers are becoming interested in consolidators—who claim to offer as much as 50 percent off international flights. But there's one burning question: What's the catch?

A consolidator is a travel agency or discount agency contracted by airlines to broker tickets that are difficult to sell at regular prices. These tickets are then passed on to other travel agencies, or to the public at a discount.

The biggest savings can be made on international travel, but according to Serge D'Adesky, owner of Gateway Travel International in Miami, you can also find good deals on domestic travel if you shop around.

Ron Archibald, manager of The Budget Traveler in Sausalito, Calif., says that, depending on the time of year, you can save up to \$600 on international flights in coach class. And, if the carrier offers a choice of seating at consolidator rates, as much as \$1,000 can be saved on international business and first-class seats. D'Adesky adds that savings of up to 50 percent are possible for some international flights.

Richard Mitsoda of Maduro Dive Fanta-Seas, however, reminds consumers of dive travel specialists' expertise. "Because of the state of the economy, a lot of people are doing their own shopping," he says. "But like most dive travel agencies, we go to every destination and resort we sell to—we've dived them and analyzed them—so there are no surprises for the customer. And everyone who answers our phones is a diver and knows divers' needs."

Other dive travel specialists point out that their services are free to divers and, because they book blocks of airline seats and resort rooms, the price of their packages is often less than the best "open market" rate available to individual divers.

Consolidators have become increasingly popular with budget-minded travelers despite newspaper ads touting

offers that seem too good to be true and don't list a company name or address.

"Ninety-five percent are on the up-and-up," says D'Adesky. "But there are a few that aren't. You've got to know who you're dealing with."

If you're dealing with a faceless voice on the telephone, you may want to investigate. "Go to the office if possible," Archibald recommends. "They could be working out of a trailer somewhere."

If booking through a consolidator sounds like a good deal, remember these tips:

- ➔ The choice of air carriers is normally limited to those that a consolidator works with. Although some agencies may try to find deals for you through other consolidators, the prices will be slightly higher.

- ➔ Many airlines offer seats at consolidator rates in coach class only; it all depends on the carrier.

- ➔ Pay with a credit card to increase your options for recourse should it be necessary, recommends D'Adesky.

**Consolidator
airfares may
seem like
the best thing
since vacuum-
sealed peanut
pouches. Here's
the scoop in
a nutshell.**



Some consolidators have reportedly gone out of business before people have gotten their tickets. Have patience—tickets purchased through consolidators are sometimes slow to arrive by mail.

- ➔ When you receive your tickets, call the airline to verify your reservation and see if you will be credited with frequent-flyer miles. Also, be aware of any restrictions or cancellation penalties that may apply.

- ➔ Like any large purchase, shop around and read the

TONY STONE WORLDWIDE

fine print. Your vacation depends on it.

To find consolidator tickets, call your local travel agent or refer to a list of discount agencies listed in the 1993 Consumer Reports *Travel Buying Guide*. To subscribe, call (800) 234-1970.

BEST BUYS IN BONAIRE

- BAHIA TOURS, (800) 443-0717, (800) 227-3483, (305) 666-1997. Through Dec. 14: Seven nights accommodations, standard room with kitchenette, round-trip airfare from Miami, 10 guided boat dives, unlimited shore dives, tanks and weights included, breakfast daily, transfers, taxes and service charges—from \$949 per person, double occupancy.
- BARBACHANO TOURS, (800) 327-2254, (305) 670-9439. Through Dec.

GETTING THERE

	Major Airline	Consolidator
Los Angeles—Sydney	\$1,121	\$938
Los Angeles—Honolulu	\$332	\$284
Miami—Grand Cayman	\$232	\$271
Miami—Bonaire	\$510	\$382

* All fares are for Sept. 1, based on round-trip ticket in coach class, with a Saturday night stay-over and ticket purchased two weeks in advance.

occupancy (add-on airfares from other cities available, based on mid-week departures).

- BLUE BONNETT TOURS, (800) 334-8582, (305) 255-2521. Through Dec. 15: Seven nights oceanfront accommodations at Harbour Village Beach Resort, five boat dives, one orientation dive, unlimited shore diving, tanks and weights, juice on dive boat, marine park entry fee, airport transfers—\$945 per person, double occupancy.
- CARADONNA CARIBBEAN TOURS, INC., (800) 330-3322 (Fla.), (800) 328-2288 (U.S.). Through Dec. 14: Seven nights accommodations, round-trip airfare from Miami, airport trans-

fers, welcome cocktail, breakfast daily, one-day car rental, airport and hotel taxes and service charges, six days of diving, unlimited shore diving including air fills, tanks and weights—\$899 per person, double occupancy (upgrade to unlimited dive package, \$80 per person, add-on airfare from Atlanta, \$60 per person).

fers, welcome cocktail, breakfast daily, one-day car rental, airport and hotel taxes and service charges, six days of diving, unlimited shore diving including air fills, tanks and weights—\$899 per person, double occupancy (upgrade to unlimited dive package, \$80 per person, add-on airfare from Atlanta, \$60 per person).

- CARIBBEAN ADVENTURES DIVE TRAVEL, (800) 934-DIVE, (305) 433-DIVE. Through Dec. 15: Seven nights accommodations at Sunset Inn, standard room with ocean view and refrigerator, six 1-tank boat dives, unlimited shore dives, taxes and service charges—\$399 per person, double occupancy.
- DIVE TOURS, (800) 433-0885, (713) 735-5218. Through Dec. 15: Seven nights, six days accommodations, unlimited boat dives, unlimited shore dives, breakfast daily, taxes, service charges and gratuities, airport transfers—from \$645 per person, double occupancy; from \$725 per person, quad occupancy.
- FLAGSHIP TRAVEL, (800) 329-8388, (407) 734-4775. Through Dec. 15: Five

EAST END.

A PLACE YOU'LL CALL HOME

A casual beachside lodge with a live-aboard crew serves up an easy going ambience.

DIVING WITH A DIFFERENCE

Untamed, untouched and unbelievable. Tubes, cuts and ravines shoot you on to sheer, breathtaking drop-offs. Experienced divers love it. New divers will never go elsewhere.

If you haven't been to East End, you haven't been to Cayman.

BACK TO BASICS

Diving as it should be—a complete experience. Interaction, adventure and discovery.

CALL (800)TLC-DIVE
OR (809)947-7555 • FAX (809)947-7560



days, four nights accommodations at Coral Regency Resort, one-bedroom units with kitchen, three 1-tank dives, transfers—from \$420 per person, double occupancy.

- **GO DIVING**, (800) 328-5285, (612) 931-9101. Through Dec. 18: Seven nights accommodations at the Sand Dollar Condominiums & Beach Club, six boat dives, unlimited shore diving, all taxes and service charges—\$652 per person, double occupancy (seventh night lodging and sixth day of diving free).

- **INNERSPACE ADVENTURES**, (800) 833-SEAS, (813) 595-5296. Through Dec. 22: Accommodations in one-bedroom oceanfront condos with full kitchen at Coral Regency Resort, six 1-tank boat dives, unlimited shore dives, includes taxes, service charges and airfare from Miami, meal plan optional—\$999 per person, double occupancy (other options available).

- **INTER-OCEAN TOURS**, (800) 345-7159, (510) 638-1741. Through Dec. 15: Seven nights in seaside apartment with kitchen, six boat dives, unlimited shore dives, vehicle rental—\$465 per person

(six people), \$499 per person (four people), \$673 per person (two people).

- **ISLAND DREAMS TRAVEL**, (800) 346-6116. Through Sept. 15: One-week accommodations at Sand Dollar Condominiums & Beach Club, fully equipped, two-bedroom, two-bath oceanfront units, includes unlimited diving—\$670 per person, quad occupancy.

- **LANDFALL PRODUCTIONS DIVE & ADVENTURE TRAVEL**, (800) 525-3833 (U.S., Canada), (510) 794-1599 (Calif.). Through Dec. 17: Four nights accommodations at Captain Don's Habitat, villa superior room, three 2-tank boat dives, unlimited shore dives, breakfast daily, airport transfers, taxes—from \$386 per person, double occupancy.

- **MADURO DIVE FANTA-SEAS**, (800) 327-6709, (305) 373-3331. Through Dec. 17: Eight days, seven nights accommodations at Captain Don's Habitat, unlimited scheduled boat dives, unlimited shore dives 24 hours a day, unlimited air refills, tanks and weights, buffet breakfast, welcome cocktail, rum punch party, airport transfers, taxes, service charges and gra-

tuities—from \$607 per person (airfare from Miami from \$259 round-trip).

- **NEAL WATSON'S UNDERSEA ADVENTURES**, (800) 327-8150, (305) 359-0065. Through Dec. 31: Six nights accommodations in deluxe apartment at Coral Regency Resort, seventh night free, six days of boat diving, unlimited shore dives, taxes and service charges—call for rates.

- **OCEANS OF DIVING**, (800) 466-1400, (708) 769-4900. Through Dec. 19: Seven nights accommodations in studio condo at Sand Dollar Condominiums & Beach Club, six boat dives, unlimited shore dives, round-trip airfare from Miami (Monday through Thursday departures), taxes and service charges—\$969 per person, double occupancy (weekend and holiday departures higher).

- **PACIFIC COAST ADVENTURES**, (800) 491-3483, (310) 260-3161. Through Dec. 21: Seven nights accommodations in one-bedroom condo at Coral Regency Resort, six dives, hotel tax, service charges, airport transfers—\$798 per person, double occupancy (one free night included in price).

SCUBA BERMUDA

A short trip to the perfect dive

NAUTILUS
DIVING LTD.



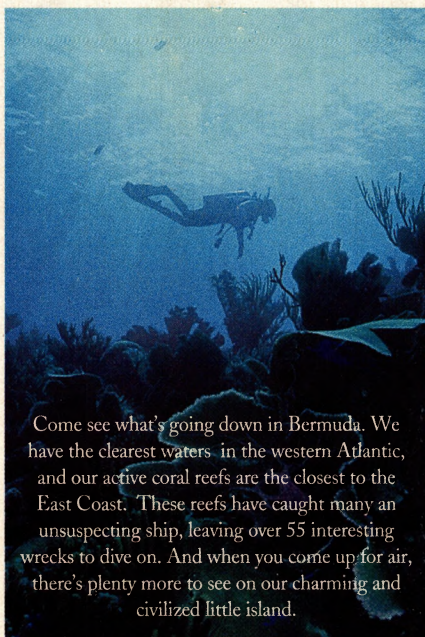
Located at the Southampton Princess Hotel, NAUTILUS is just a short boat ride from the South Shore's best shipwrecks. Its sister shop, ADVENTURE WATERSPORTS, located at the Hamilton Princess Hotel, offers another selection of prime dive sites off the West, North and East sides of the island. Multi dive packages, referral certifications, resort courses, and night and deep dives are also available.

(809)238-2332 (Southampton)
(809)295-9485 (Hamilton) • Fax (809)295-3416
CIRCLE NO. 71 ON READER SERVICE CARD



Bermuda's largest diving facilities located at Grotto Bay Beach Hotel, Sonesta Beach Hotel, and serving Marriott's Castle Harbour Resort. Resort courses. Shipwreck, shallow reef dives. Two-tank dives daily. Rentals and repairs.

Phone: (809)293-2915 • Fax: (809)236-0394
CIRCLE NO. 73 ON READER SERVICE CARD



Come see what's going down in Bermuda. We have the clearest waters in the western Atlantic, and our active coral reefs are the closest to the East Coast. These reefs have caught many an unsuspecting ship, leaving over 55 interesting wrecks to dive on. And when you come up for air, there's plenty more to see on our charming and civilized little island.



BERMUDA

Bermuda's most up to date PADI Dive Center located at Darrell's Wharf, Paget. All levels of diving and instruction plus resort courses. Complete equipment sales. Affiliated with Elbow Beach Resort and Palm Reef Hotel.

Phone: (809)236-6339 • Fax: (809)236-8926
CIRCLE NO. 68 ON READER SERVICE CARD



Blue
Water
Divers
CO. LTD.

Serving Bermuda for over 25 years. A full-service scuba facility. PADI, NAUI, SSI Certification. Introductory lesson and dive certification referrals/completions. Shipwreck and reef diving. Complete equipment sales, service.

Phone: (809)234-1034 • Fax: (809)234-3561
CIRCLE NO. 62 ON READER SERVICE CARD

For more information about a diving holiday in Bermuda call

1-800-821-1199

• **RASCALS IN PARADISE**, (800) 443-0799, (415) 978-9800. Year-round: Seven nights accommodations at Sand Dollar Condominiums & Beach Club, diving for adults, Sand Penny Club for kids, taxes and service charges—from \$2,000 for family of four.

• **SCUBA VOYAGES**, (800) 544-7631, (909) 371-1831. Through Dec. 15:

Seven nights accommodations at Harbour Village Beach Resort, oceanfront room, five days of 1-tank boat dives, unlimited shore dives, airport transfers, one-day rental car—\$945 (plus tax) per person, double occupancy.

• **SEA SAFARIS**, (800) 821-6670, (310) 546-2464. Through Dec. 15: Six nights accommodations in two-bedroom unit at Sand Dollar Condominiums & Beach Club, one night free, six days of 2-tank boat dives, unlimited shore dives, taxes and service charges—from \$567 per person, quad occupancy

(some restrictions apply).

• **SPORTOURS**, (800) 423-7243 (North America), (800) 660-2SKI (Southern California), (818) 790-4882. Through

Dec. 15: Seven nights accommodations at Divi Flamingo Beach Resort & Casino, five days diving—from \$635 per person, standard accommodations (round-trip airfare available

from all major gateways).

• **TROPICAL ADVENTURES TRAVEL**, (800) 247-3483, (206) 441-3483. Through Dec. 18: Seven nights accommodations in two-bedroom cottage with living room, dining area, kitchen and large patio at Captain Don's Habitat; includes breakfast buffet daily, six days of 2-tank boat diving, unlimited shore diving, airport transfers, taxes and gratuities—\$607 per person, double occupancy (September through December requires four-person minimum, or add \$73 per person).

GAL-OOPS!-AGOS

In a list of live-aboards that go to the Galapagos (RSD, July '94), we overlooked the *Reina Silvia*. The *Silvia* is a 90-foot, air-conditioned boat that carries 16 divers to the northern Galapagos islands of Darwin and Wolf in December, January, May and June.

Call AQUATIC ENCOUNTERS at (303) 494-8384 to book a trip aboard the *Reina Silvia* during these months.

HOT, NEW DIVE VACATIONS

• **BOLONGO BEAT**: The St. Thomas Diving Club at Bolongo Bay is offering dive/hotel packages in cooperation with the Bayside Inn. Three nights accommodations with five dives (\$345/one person, \$510/two) and seven nights accommodations with 10 dives (\$695/one person, \$970/two) are available through Dec. 15. Three nights accommodations with five dives (\$399/one person, \$560/two) and seven nights accommodations with 10 dives (\$825/one person, \$1,099/two) are available from Dec. 16 through April 14, 1995. All packages are subject to room taxes and service charges.

For more information, call the ST. THOMAS DIVING CLUB at (809) 776-2381.

• **NATURE'S CLASSROOM**: The University of California at San Francisco is holding its Marine Biology for Scuba Divers short course Sept. 12, 19 and 26, followed by a weekend of diving the Monterey Peninsula Oct. 1 and 2 or Oct. 8 and 9. The seventh annual event costs \$95 per diver and will focus on marine ecology and plants and animals

BIRD ROCK BEACH HOTEL

Small enough to offer personalized attention, BIRD ROCK BEACH HOTEL on St. Kitts is also large enough to provide full resort services to all guests. Full scuba packages offered. 809-465-8914

TIMOTHY BEACH HOTEL

For those looking for luxury and unspoiled tranquility on a splendid Caribbean Beach, it's waiting at TIMOTHY BEACH RESORT, on St. Kitts today. Scuba pkgs offered. 809-465-8597

OUALIE BEACH HOTEL

Experience the island of Nevis, and encounter the laid back ambience of the OUALIE BEACH HOTEL, where sunsets are spectacular, and the tomorrows even better. Full scuba pkgs offered. 809-469-9735

GOLDEN ROCK HOTEL

Experience yesterday's elegance with today's modern comforts at the GOLDEN ROCK HOTEL on Nevis; a very special hideaway. Scuba pkgs offered. 809-469-3346



NY (212) 535-1234 • NY Fax (212) 734-6511
(800) 582-6208 • St. Kitts (809) 465-4040

**LANDFALL
PRODUCTIONS**
Dive Travel Specialists

CARIBBEAN SIZZLING SECRET!!

ST. KITTS & NEVIS

Effortless Diving



7 night
Scuba
pkgs from
\$679

Fantastic Views



Convenient Air Service

St. Kitts & Nevis #1 Adventure Travel Expert

(800) 525-3833

(510) 794-1599 in California



of California's nearshore communities.

Call Millberry Programs & Services, UNIVERSITY OF CALIFORNIA at (415) 476-1115 for more information.

- **SUNNY MONEY:** The Club Cozumel Caribe is now accepting a new currency equal to \$100 called the Sun Dollar, which can be used toward accommodations at the resort in Cozumel. The Sun Dollar will be honored through Sept. 23 and from Nov. 5 to Dec. 23, and is valid for single guest room occupancy. Two guests occupying a double room can present one Sun Dollar for \$100 toward each of their one-week minimum stay. The offer is valid for some packages.

- **RED SEA ALERT:** Rothschild Travel Consultants is offering a unique dive package to the Red Sea through spring 1995. The package includes seven nights accommodations in Aqaba, Jordan, one night in the capital city of Amman, three meals daily, round-trip airfare from New York City, five 2-tank guided boat dives, transfers, taxes and service charges and a day excursion to Petra, Jordan. Prices are \$1,599 per person for groups of 10 or more, \$1,799 per person for individual bookings. Nondivers, \$1,449 per person, or \$1,649 when accompanying nongroup participant.

Call ROTHSCHILD TRAVEL CONSULTANTS at (800) 359-0747 or (212) 662-4858 for reservations and details.

- **SURF 'N' SAFARI:** Aquatic Encounters is leading an "Expedition to Paradise," the Aldabra Atoll in the Seychelles island group Nov. 20 through Dec. 3. Travel between these islands located 400 miles off the African mainland will be aboard the 115-foot *Fantasea II* live-aboard. An optional photographic safari to Botswana and Zimbabwe Nov. 10 through 18 can be added on to the dive trip. Costs are approximately \$4,200 per person for the dive trip and \$2,000 per person for the photo safari. Prices do not include airfare.

Call AQUATIC ENCOUNTERS at (303) 494-8384 for reservations and details.

- **FAR OUT:** Tom Jaeger Dive Expeditions is leading a dive trip to the remote Rowley Shoals more than 150 miles west of Broome, Western Australia, Sept. 24 through Oct. 3. Divers will reach the Shoals on a 62-foot twin

masted cutter ketch. Cost is AUS \$5,970 per person.

Call TOM JAEGER DIVE EXPEDITIONS at (011) 619-383-2018 or (011) 619-384-5216 for more information.

- **BEST OF BOTH WORLDS:** Sea Saba Dive Center and Anchorage Hotel and Dive Center are joining forces to offer hotel/dive packages that merge Saba and Dominica into one dive vacation. Ten-night/6-dive day (\$1,286 per person), 14-night/10-dive

day (\$1,770 per person) and 21-night/16-dive day (\$2,615 per person) packages are available through Dec. 15. All include breakfast and lunch daily, airport and boat transfers, two dives daily, taxes, service charges and marine park fees, inter-island airfare and welcome cocktail.

Call SEA SABA DIVE CENTER at 011-599-4-62246 or ANCHORAGE HOTEL AND DIVE CENTER at (809) 448-2638 for more information. ☺

"Now that's frontier diving." Northwest Point & wild West Caicos

Breathtaking walls. Abundant marine life. Unspoiled coral canyons. This is frontier diving with Dive Provo. Located in the Turks and Caicos Islands, Dive Provo has been quietly discovering Providenciales' best dive sites for over 3 years. Their Five-Star facility offers a wide range of scuba

services, including full service photography and video capabilities. The staff of highly trained professionals knows how to make your dive experience picture perfect. After a day of taming the wild frontier, spoil yourself in the



Turquoise Reef
RESORT & CASINO

comforts of the Turquoise Reef Resort & Casino.

Where every amenity exists

Stephen Juhl for your pleasure. Swimming pool. Jacuzzi. Restaurant and lounge.


And 5 miles of white sandy beach. So grab your camera and discover frontier diving at its best. Discover Dive Provo.

Hotel and dive packages start as low as \$379.

For reservations call: **1 800 234-7768** or 305-351-9771.

Dive Provo

CIRCLE NO. 27 ON READER SERVICE CARD



A WOODEN WALK-IN GIVES CAVE
DIVERS A LAUNCHING POINT FOR THE
UNDERWATER MAZE AT MADISON
BLUE SPRINGS. SEARCHING FOR THE
TELLTALE CLEAR-WATER RUN ON THE
SPRING-FED WACISSA RIVER (RIGHT),

SPRINGTIME



**Boasting waters
spring-warm and
spring-clear year-round,
the Florida springs are
a fresh alternative to
swells, spray and salt.**

BY BUCK BUTLER

PHOTOGRAPHY BY

M. TIMOTHY O'KEEFE

R

oving the hardtop highways of north-central Florida, I'm waiting for a sign—one that will lure me off these asphalt arteries and onto the simpler, earthier byways that lead to nearly every one of this region's drive-to dive sites. After just three days on the road, my Isuzu Trooper has taken on an early form of the dive locker/laundry basket it will become in the next week-and-a-half of driving and diving Florida's ether-world of freshwater springs.

Already there have been signs. Yesterday it was the "Sonny's Fat Boy's Bar-B-Q" billboard that offered consolation following a fruitless manatee search in Crystal River, and the "Museum of Drag Racing" interstate placard I reluctantly passed en route to Ocala. This morning the "Our Lady of the Springs Catholic Church" sign set my mind to work, creating a cathedral full of tank-backed faithful, genuflecting and fingering power inflator hoses like rosaries, praying for divine visibility.

This afternoon's sign continues the religious motif: an inconspicuous red mailbox with a diagonal white stripe and a hand-painted promise: "Paradise Springs." I pull fast on the reins to make the turn and the Trooper lurches into the shade of another piney forest on another ungraded sand-and-dirt path. It's a scene photographer Tim O'Keefe and I will find a dozen times during this springs-country walkabout to destinations with names like Devil's Den, Peacock, Vortex and Cypress.

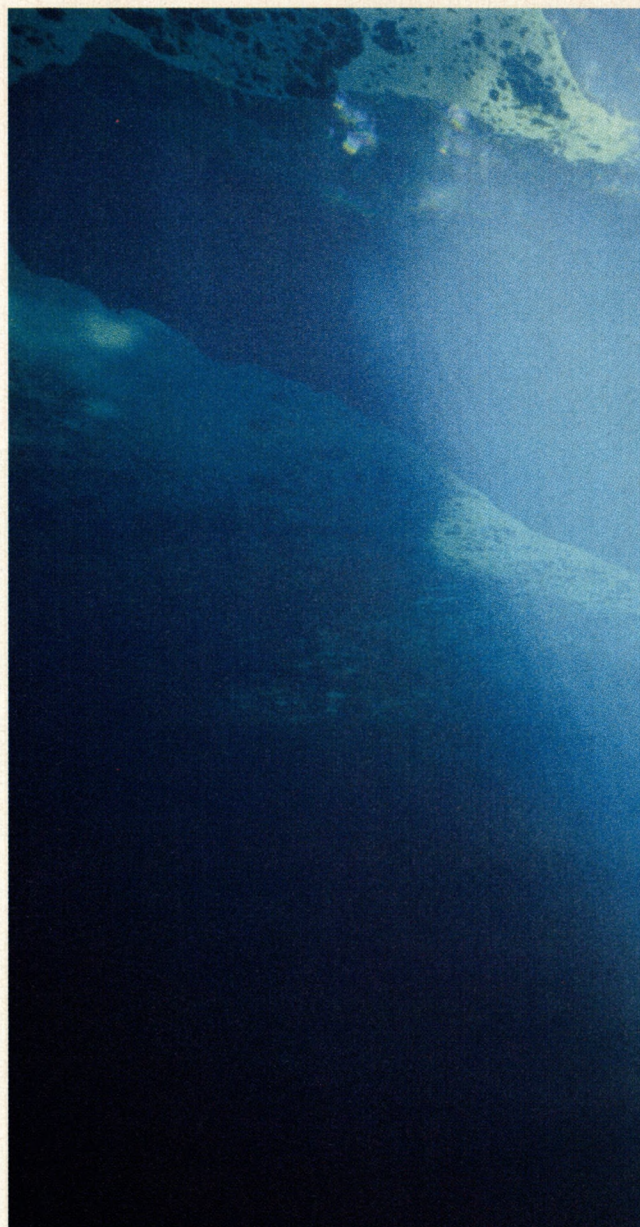
Over the railroad tracks, this particular path ends in a makeshift parking area in the front yard of a simple yellow house, no water in sight. A baby-faced teen answers the door, quickly takes our measure as he must have a thousand times before and calls out: "Mom! ... Divers!"

As I stand on the steps of the Paradiso home southeast of Ocala, Fla., dive gear in hand, the differences between this destination and a Caribbean dive boat are hard to miss: the German shepherd licking my hand like a jerky treat, the gray goose hissing from his wire cage, the chickens free-ranging in the front yard, and, when Jim Paradiso leads me down the stone steps in his backyard, the dive site the size of a kiddie pool.

But this is a kiddie pool with a difference. Like the 300-odd other springs and sinks in the Sunshine State, it leads directly to—or, perhaps more accurately, *from*—another world.

This hidden world stretches, pulses and flows just beneath the sandy surface, coughing up freshwater oases beginning in the panhandle and continuing around the peninsular bend into north-central Florida. In places, springs are clustered on the banks of rivers like the Suwannee and the Ichetucknee and in others they stand alone, natural reservoirs in the woods.

Wherever you find springs—from Tallahassee,



A hidden

world

stretches,

pulses and

flows just

beneath

Florida's

sandy

surface.

Gainesville and Ocala to smaller spring-happy towns like Branford, High Springs, Williston, Chiefland and Ponce de Leon—you're sure to find divers. More than 50,000 divers visit the springs each year—as many as the most popular tropical destinations and exceeded only by the number who visit the Florida Keys.

Poofer Paleontology

A trio of chickens has followed us down to the spring, scratching through leaves in search of food as I dump air from my BC and follow Jim into the fossilarium of **Paradise Springs**.

Just below the surface, the kiddie pool illusion vanishes quickly as the

THE LURE OF THE UNKNOWN

Thanks to cave-diving courses and the efforts of cave divers to erect warnings in potentially dangerous places, cave-diving deaths are on the decline. Yet every year a few open-water divers and even instructors drown in Florida's caves. Somehow they slip by the warnings and into trouble.

I've discovered some interesting things about people's perceptions of underwater caves and how those perceptions guide individual behavior when diving caverns and caves. Do this simple experiment: Close your eyes and think about what it would be like to find yourself in an underwater cave out of sight of light.

Use a pen to circle any of the words listed here that came to mind: "dark," "scary," "lost," "claustrophobic," "panic," "mazes," "trapped," "death." If you circled two or more of these words then you are in imminent danger should you decide to enter a Florida spring containing caverns or caves. The problem? You may be relying on your perception of a cave to warn you not to go in one.

When interviewing divers who have returned from dives into caverns they weren't trained to enter, they described the environment they encountered as: "beautiful," "clear," "intriguing," "big rooms," "wonderful formations," "inviting," "other-worldly." Could these be the same places?

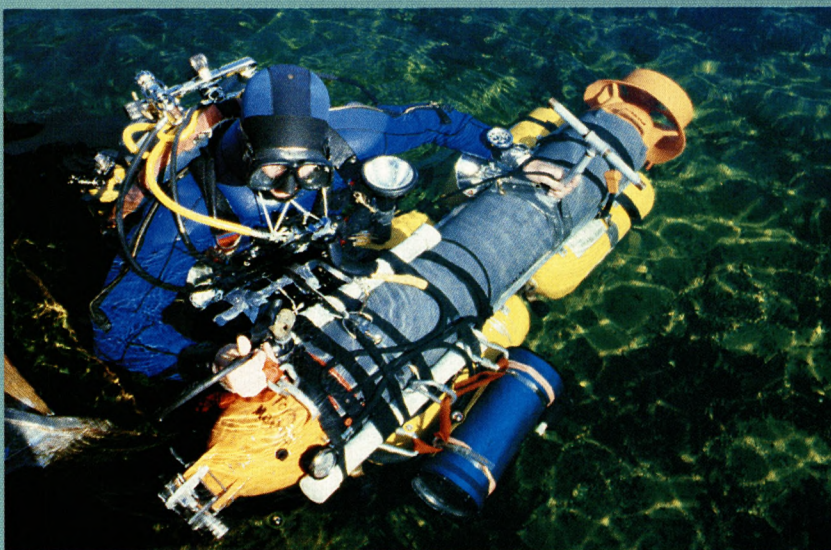
Without even knowing it, normally safe and conscientious open-water divers find themselves inside an overhead environment without receiving any of the perceptual warnings they thought would be staring them in the face. Instead you and your buddy may be facing the same magical lure that hundreds of drowned scuba divers faced when they innocently wander into the overhead environment without proper training. The bottom line: Don't depend on your instincts to keep you out of one of the most dangerous environments on the planet. Over and over divers have proven that they had no idea they had arrived at a point of no return until it was too late.

If you want to be safe, try this simple rule: *Don't take lights in the*

water. Without a light, you can comfortably explore any portion of a spring or cavern without ever leaving natural light. An artificial source of light can lead you away from natural light and into the black world of underwater caves where training is a must.

My recommendation is to try spring or cavern diving in a location that offers guided dives or a controlled environment that will keep you out of harm's way. If you decide caverns aren't for you, stay out of them. If you're intrigued by the experience, try taking a cavern course offered through the National Speleological Society, Cave Diving Section (NSSCDS) or the National Association for Cave Diving (NACD), available at many diving facilities in the springs area.—WES SKILES

WITH THE RIGHT GEAR ON YOUR BACK AND PROPER TRAINING UNDER YOUR BELT, CAVE DIVING CAN LEAD YOU TO PLACES MOST PEOPLE DON'T KNOW EXIST.

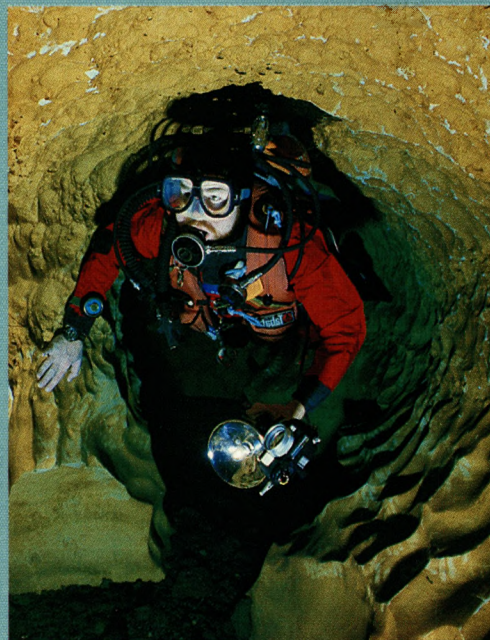


REFRESHING CHANGE

Diving Florida's springs isn't like diving Florida's coast. You won't find technicolor reefs, tropical fish, five-star resorts and white-sand beaches. But here are five things ocean divers won't miss:

- ☛ **BOATS.** Forget the crowded dive deck—choose a picnic table and take all the space you need.
- ☛ **TIME LIMITS.** Gear up at your own pace and walk into the water when you're ready.
- ☛ **WAVES.** No motion means no motion sickness.
- ☛ **STINGS,** bites and tears.
- ☛ **SALT.** I get the biggest kick out of watching divers rinse their gear off with a hose after a freshwater spring dive.

—WES SKILES



KARST PRODUCTIONS/WES SKILES

GENERAL

► **LOCATION AND TOPOGRAPHY:** More than 300 springs—among the smallest and largest in the world—web north-central and Panhandle Florida. The area's nonporous bedrock rests on permeable limestone—called karst terrain—a Swiss cheese-like calcium carbonate labyrinth of caves, passageways and underground fresh water called the Floridan Aquifer. Billions of gallons of water flow from the underground aquifer through these springs every day.

► **HISTORY:** Primitive, stone age people flourished next to these springs that shaped their religion and everyday lives more than 10,000 years ago. Traces of one advanced colony that was established on the banks of Crystal River 2,000 years ago is evident in the remains of their carved stone pillars.

From early times, Florida's springs have had sacred, healing properties ascribed to them, giving rise to Ponce de Leon's legendary search for a fountain of youth in 1513.

In the 1770s colonial naturalist William Bartram described Florida in his now classic book *Travels*. It was his thoughtful observations of the springs—"I look down again to the fountain with anxiety, then behold them as it were emerging from the blue ether of another world...."—that led to early interest in this unknown environment.

► **CLIMATE:** Spring is pleasant with average daytime temperatures of low 60Fs to mid-70Fs. Fall is warmer, with average daytime temps of mid-60Fs to low 80Fs. Summer is hot—85F to 95F every day with humidity in the 80 percent to 90 percent range. Winter temps are unpredictable but cool, especially in the Panhandle—cold fronts can drag daytime temps down into the 30Fs for days at a time. December through February are the coldest months.

DIVING

► **DIVING SEASON:** Year-round.

► WATER TEMPERATURES:

The springs of north-central Florida hover around 72F year-round while those on the Panhandle are three or four degrees cooler. For most divers that means wearing a full wetsuit.

► **VISIBILITY:** Generally excellent although kicked-up silt can affect vis in some springs. In the winter, water clarity can be reduced considerably in some springs due to overflow from adjacent rivers.

► **DIVING SKILLS:** The springs offer a mixed bag of diving opportunities for all levels of experience. A strong note of caution: Signs carrying representations of the Grim Reaper—a skeleton with a scythe—is a stop sign warning divers not trained in cave diving to stay out of areas beyond their skill levels.

► **MARINE LIFE:** This is a fertile habitat that supports

aquatic creatures which are well-suited ambassadors of their subterranean realm—the American eel, cave crayfish, Florida gar, Florida snapping, stinkpot and loggerhead musk turtles, lake chubsucker, hogchoker sole, mosquitofish, river snail, spotted sucker and the tadpole madtom.

ACCOMMODATIONS

Check with the following chambers of commerce for a listing

of accommodations near the springs in their area:

Crystal River Chamber of Commerce, (904) 795-3149

Williston Chamber of Commerce, (904) 528-5552

Branford Chamber of Commerce, (904) 362-3071

Washington County (for Bonifay and Vernon) Chamber of Commerce, (904) 638-4157

High Springs Chamber of Commerce, (904) 454-3120

Ocala Chamber of Commerce, (904) 629-8051

Madison County Chamber of Commerce, (904) 973-2788

Walton County (for De Funiak and Ponce de Leon), (904) 892-3191

In Tallahassee, call the Convention and Visitors Bureau, (800) 628-2866.

Some of the springs have campgrounds (and some also have RV sites and cabins):

Central Florida:

• Alexander Springs (Ocala National Forest Recreation Area), (904) 669-3522

• Blue Springs State Park (Orange City), (904) 775-3663

• Devil's Den (Williston), (904) 528-3344

• Rainbow River State Campground (Dunnellon), (904) 489-5201

North-Central Florida:

• Madison Blue Springs Resort (Lee), (904) 971-2880

• Jim Hollis' River Rendezvous (Mayo), (800) 533-5276

• Ginnie Springs Resort (High Springs), (800) 874-8571

• Manatee Springs State Park (near Chiefland), (904) 493-6072

DIVERSIONS

Topside, Florida isn't only Walt Disney World—you can bump into a number of unique attractions if you detour off the main highways. These small-town diversions are like seed pearls strung together along ribbons of state road in Florida's north-central and Panhandle interior. Here's a sampling of offbeat things to do (with the springs that are nearby shown in parentheses).

In Homosassa (south of Crystal River), the only antebellum sugar mill in the country has been partially restored at the Yulee Sugar Mill Ruins State Historic Site. The mill is located on SR 490 southwest of U.S. 19; call (904) 795-3817 for more information.

Thoroughbred horses are bred on farms in the Ocala (Alexander, Paradise, Devil's Den, Blue Grotto springs) countryside. Many of the farms welcome visitors; call for information from the Ocala/Marion Chamber of Commerce, (904) 629-8051.

Chiefland (Manatee Springs) hosts a watermelon festival the third Saturday in June—don't miss the seed-spitting contest and watermelon auction.

The Huggy Bear Lounge at Jim Hollis' River Rendezvous (Troy, Peacock system) features 238 different kinds of beer, including Blackened Voodoo, Santi Claus, Rattlesnake and Broken Hill. But remember: Don't drink and drive.

Pioneer Day is an annual festival held in Mayo (Peacock system) the second Saturday in October. A tribute to the area's earliest settlers, the festival features clogging, antique cars and country food.

The Walton-De Funiak Public Library (Vortex, Morrison) is the state's oldest public library continuously operating in its original building; it opened its doors on Dec. 20, 1887. Its European armor collection has pieces that date from the Crusades (1100-1300 A.D.).

The Florida Folk Festival is held annually on Memorial Day at White Springs and features some of the region's best folk, old-time and bluegrass musicians.


JUST IN CASE

► **RECOMPRESSION CHAMBERS:** In case of an emergency, contact the DAN emergency line at (919) 684-8111.

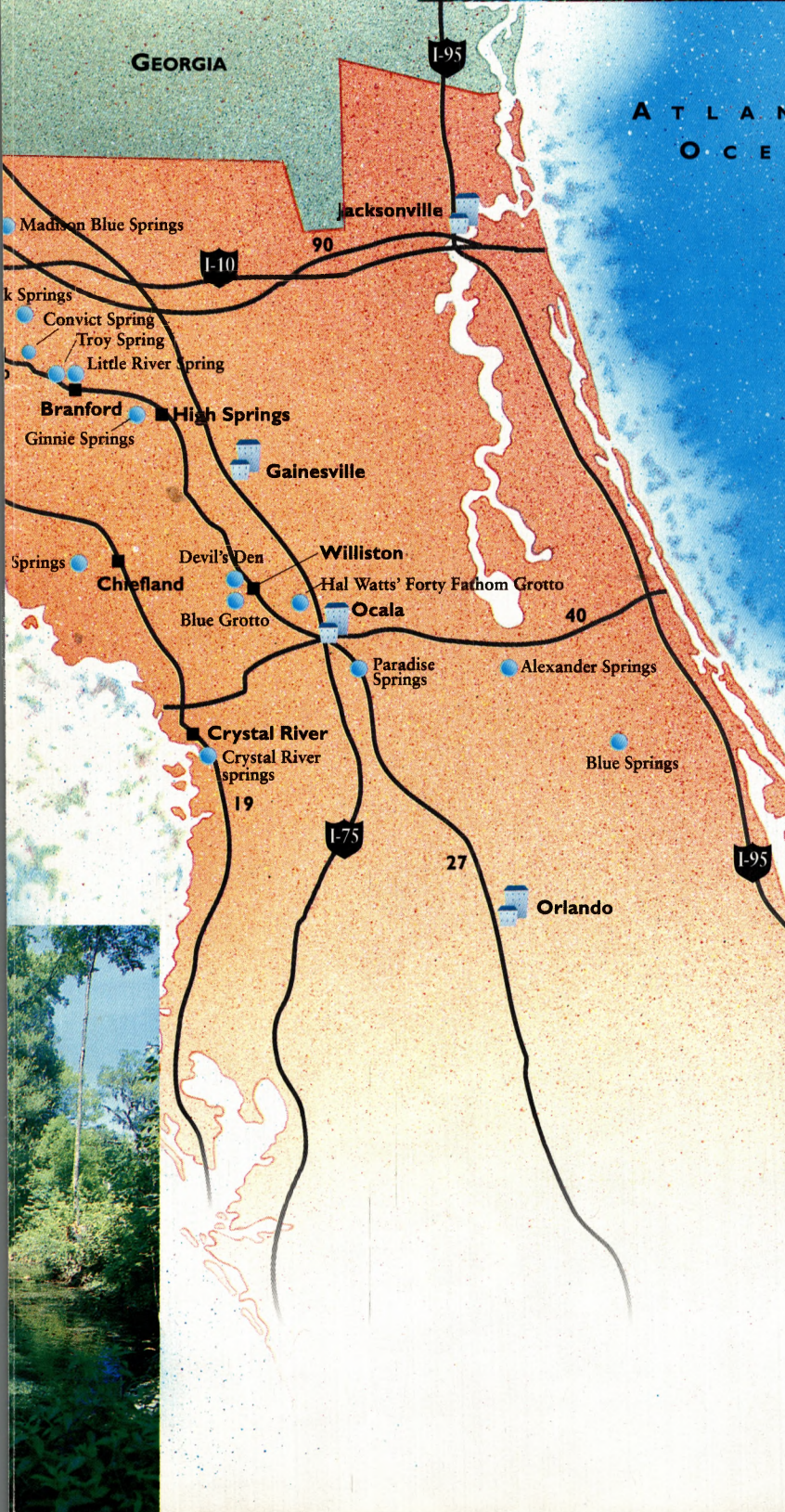
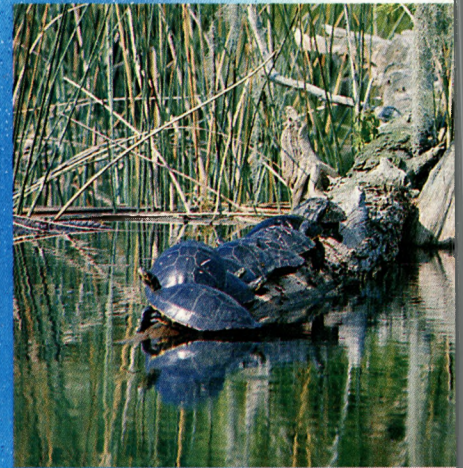
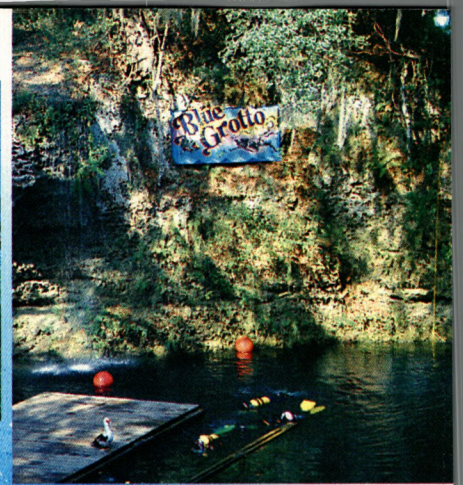




**SIX-PAGE
PULL-OUT
MAP**



PARADISE SPRINGS:
SUBTROPICAL FLORA
ABOVE WATER,
PREHISTORIC FOSSILS
BELOW.



SUWANNEE COOTERS FIND SUNNY SPOT ON THE WAKULLA RIVER TO SPEND THE AFTERNOON (CENTER). CYPRESS TREES THRIVE ON THE BANKS OF MORRISON SPRING (ABOVE). THE WATER IS TRANSPARENT AND THE EELGRASS IS THICK AT ALEXANDER SPRINGS IN THE Ocala NATIONAL FOREST (TOP LEFT). DIVERS BEGIN THEIR DESCENT INTO THE CAVERN AT BLUE GROTTO (TOP RIGHT).

FLORIDA SPRINGS



THE ROCKY ENTRANCE AT LITTLE RIVER SPRING LEADS TO ONE OF THE FINEST CAVE DIVES IN THE STATE (LEFT). SPRINGS COUNTRY IS ALSO GATOR COUNTRY—LOOK UP BEFORE SURFACING (ABOVE). EACH OF THE SIX SPRINGS AT GINNIE SPRINGS RUNS TO THE SANTA FE RIVER (RIGHT).



Choice Dive Deals in the Florida Springs

	Primary Dive Areas	Specialties/Services	Open year-round?	Dive Fees	Gear Rental Fees	Lodging Available?	Snorkeling
American Pro-Diving Center (800) 291-DIVE, (904) 563-0041	Crystal River-King's Spring, Rainbow River, Ginnie Springs	guided manatee tours	yes	\$37/day	tanks: \$7 weights: \$3.50	nearby hotel/motel, campground	\$20/half-day
Bay Point Dive Center (904) 563-1040; fax: (904) 563-5319	King's Spring		yes	\$25/day	tanks: included weights: included	nearby hotel/motel	\$25
Bird's Underwater (904) 563-2763	Crystal River, Rainbow River, Ginnie Springs	manatee snorkeling tours	October-March	\$25/half-day	tanks: \$7 weights: \$3	nearby hotel/motel, campground	\$25/half-day
Blue Grotto Springs (904) 528-5770	Blue Grotto	specialty instruction, on-site repair, hot showers	yes	\$20/day	tanks: \$8 weights: \$3	nearby hotel/motel	N/A
Branford Dive Center (904) 935-1141; fax: same	Troy Springs, Little River, Royal Springs	boat excursions, enriched air-Nitrox	yes	\$10/day	tanks: \$8 weights: \$3.50	on-site hotel/motel, campground	\$15
Crystal Lodge Dive Center (904) 795-6798	Main Springs, Gator Hole, 3 Sisters		yes	diving included in boat rental fees: \$50/2 1/2-hour guided tour or \$12/diver; unguided tour: \$10 first hour, \$4.50/hr. thereafter	tanks: included weights: included	on-site hotel/motel	✓
Cypress Springs (904) 535-2960	Cypress Springs	cavern diving	yes	\$8/day	air fills only	campground	✓
Devil's Den & Stellina Diving School (904) 528-3344; fax: (904) 528-5352	Devil's Den	prehistoric diving, underground spring, horseback riding	yes	\$20/day	tanks: \$6 weights: \$3	nearby hotel/motel, campground	\$3/day
Ginnie Springs Resort (800) 874-8571, (904) 454-2202; fax: (904) 454-3201	Ginnie Springs		yes	\$24/day	tanks: \$8 weights: \$3	nearby hotel/motel, campground	\$6
Hal Watts' Forty Fathom Grotto (904) 368-7974; fax: (904) 351-1924	Hal Watts' Forty Fathom Grotto	extended range, deep and Nitrox diving	yes	\$35/day	tanks: \$8 weights: \$3	nearby hotel/motel, nearby campground	N/A
Madison Blue Springs (904) 971-2880	Madison Blue Springs	dive shop, canoeing, horseback riding	yes	\$10/day		nearby hotel/motel, campground	\$2
Paradise Springs (904) 368-5746		personal service, reservations accepted	yes	\$21/day	tanks: \$6 weights: \$3	nearby hotel/motel	N/A
Plantation Inn Marina/Dive Shop (800) 632-6262, (904) 795-5797; fax: (904) 759-1368	Crystal River, Rainbow River	manatee tours, boat rentals, resort course	yes	\$17.50/dive	tanks: \$7 weights: \$10/lb.	on-site hotel/motel	\$15
Port Paradise Scuba Center (800) 443-0875, (904) 795-7234; fax: (904) 563-5341	Crystal River, Rainbow River	100 yards from King's Spring at Crystal River	yes	\$59/day	tanks: included weights: included	on-site hotel/motel	\$15
Steamboat Dive Inn (904) 935-2283; fax: (904) 935-1471	Little River, Ginnie Springs, Devil's Eye	cave gear, large dive center, Troy and Ichetucknee charters	yes	\$15/day	tanks: \$8 weights: \$4	on-site hotel/motel, campground	free
Talley's Pro Dive (904) 795-2776; fax: (904) 563-0295	Crystal and Rainbow rivers, Manatee Springs, Silver River	guided dive trips, 3-day open-water certification	yes	\$36/day	tanks: \$7 weights: \$10/lb.	nearby hotel/motel, campground	\$36
Vortex Spring, Inc. (800) 342-0640, (904) 836-4979; fax: (904) 836-4962	Vortex Spring	on-site diving, full-service shop	yes	\$15/day	tanks: \$7 weights: \$3	on-site hotel/motel, campground	✓

below water. Limestone boulders litter the floor and are piled one on another nearly to the surface, creating a maze of swim-throughs, cracks and crevices to check out. The pool is only 40 feet across and 60 feet deep, but there are several different dives here. Drop down to 60 feet and swim the circumference of the pool, taking time to poke your head in the small cracks in the walls and float over, under and through the many passageways and swim-throughs. Ascend 10 feet and circle the room again for a completely different look. Do it again at 40, 30 and 20 feet. Still haven't had enough? Turn around and swim it counter-clockwise. You get the picture.

Just down the road, on the opposite side of the highway, is Blue Grotto, another commercially operated sink and one of the best cavern dives in the

state. Blue Grotto's 80- by 20-foot cavern entrance is an irresistible invitation for even the most reluctant first-time spring diver. Turning around to exit any cavern is like swimming toward a clear picture window and at Blue Grotto the window is on a dramatic IMAX scale. The cavern slopes to a maximum depth of 100 feet and a permanent guideline leads the way in and out.

Visibility: Forever

.....

After a night at the diver-friendly Williston Motor Inn, we toss our by-now ripe wetsuits in the Trooper and head north for High Springs and what is probably the best-known spring system in the country.

Ginnie Springs has it all—six separate springs offering opportunities for snorkeling, open-water diving, cavern

and cave diving. Families gather at the riverside campground for long weekends of roasting marshmallows and floating the Santa Fe River via inner tube or canoe. And although it's apropos for most any of Florida's unclouded springs, Ginnie is the spot that inspired Jacques Cousteau to gush: "visibility forever."

The cavern at the main spring gapes open in 15 feet of fish-filled water and provides first contact with the lure of the unknown for uninitiated open-water divers. A permanent guideline on the rocky floor leads to the cave entrance, which is grated off at 55 feet. Facing the entrance and gazing into the darkness beyond, it's not hard to imagine that the jail-bar grate was put there not to keep me out, but to keep some powerful force in—unseen, but constantly exhaling a powerful breath of cold, clean water. Overhead, my own exhalations gather

Dive Pkgs	Hotel Pkgs	Night Diving	Open-Water Certification	Cavern Certification	Cave Certification
✓		✓	✓	✓	✓
✓			✓		
✓		with advance notice	✓	✓	✓
✓	✓	✓	✓	✓	✓
		✓	✓		
✓	✓	✓	✓	✓	✓
✓		✓	✓	✓	✓
		by appointment		✓	✓
		✓	✓		
✓	✓	✓	✓		
	✓		✓	✓	✓
✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓

on the cavern ceiling in jiggling pools of gravity-defying mercury. I take my time exploring the nooks and crannies in the pocked stone walls, glancing occasionally toward the entrance to find the light that streams in from a patch of water as blue as Windex.

Down the road, cave divers waddle from their picnic-table staging areas toward the Devil's Ear and Devil's Eye system. From my open-water vantage point, the Ear and the Eye are two holes in a spring run, but they lead to an extensive maze of caves. Cave divers disappear into these holes, loaded with double tanks, reels and redundant everything to reappear hours later.

One dive into the Ear, just on the edge of the tea-colored Santa Fe, is worth the price of admission if only to experience firsthand the oil-and-water meeting of spring and river waters. And

if you want to see what's in all that brownness, swim on into it (trailing a dive-flag float), drift downstream and exit when you find more clear water at one of the springs along the way.

Center of the Universe

Next stop: Branford. Sign: "Welcome to Branford, Spring Diving Capital of the World." A more accurate claim might have been "Cave Diving Capital of the World." Branford lies smack in the middle of three spring-studded rivers—the Ichetucknee, the Suwannee and the Santa Fe—and has become the center of the cave-diving universe.

The closest commercial operation for open-water divers is **Jim Hollis' River Rendezvous** in Mayo where you can dive **Convict Springs** on the premises or catch a pontoon to a number of other springs including **Troy**, one of the few places you can dive the wreck of a paddle-wheel steamship, scuttled in 1863.

Over the door to the pump room at the Steamboat Dive Inn in Branford is another sign: "Through these doors pass the finest cave divers in the world." We carry our tanks inside and find a watermelon chilling in the 48-degree water tank for air fills.

The next day, we take a quick look at **Little River Spring** up the road, resisting the temptation to penetrate any farther than our training will safely take us. Back on the sand flats above the cave entrance, I kick along a few feet from the bottom and watch tiny freshwater flounder betray their clever camouflage by taking off in a tiny burst of sand when I come close—silver-dollar pancakes with turbo boost.

After the dive we're removing our equipment in the parking spot beside a pair of cave divers who are gearing up. I make a stab at small talk. "Diving the cave today?" I ask, friendly enough.

"Why do you want to know?" replies one, stone-faced.

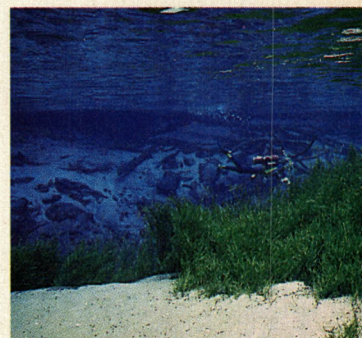
"Oh, just wondering," I say, starting to fidget.

He never looks up from the gauges, tanks and computers he's readying for the dive. "You know they pull a lot of bodies out of these caves. You shouldn't try this without" (Continued on page 97)

Five More Places To Wet Your Whistle Without Ever Tasting The Salt

ALEXANDER SPRINGS. Located in the Ocala National Forest, Alexander Springs is a national forest recreation area. A spectacular shallow dive makes the 200-yard gear-trudge from the parking lot well worth the effort. It's perfect for underwater photographers: crystal water, sugar-white sand, vibrant green eel grass and large schools of bream, mullet and bass. Maximum depth: 30 feet.

CYPRESS SPRINGS. Two miles north of Vernon in the panhandle, this pristine commercially operated spring is a short drive from Ponce de Leon. The spring vent at 25 feet produces 90 million gallons of water a day and you'll feel every ounce of it as you kick against the unusually strong flow toward the cavern entrance. The cavern continues to a depth of 70 feet within the glow of natural light. Topside, the pool is 150 feet across and is nestled in a primitive cypress low-land.



ANOTHER HOLE IN THE WOODS: CYPRESS SPRINGS.

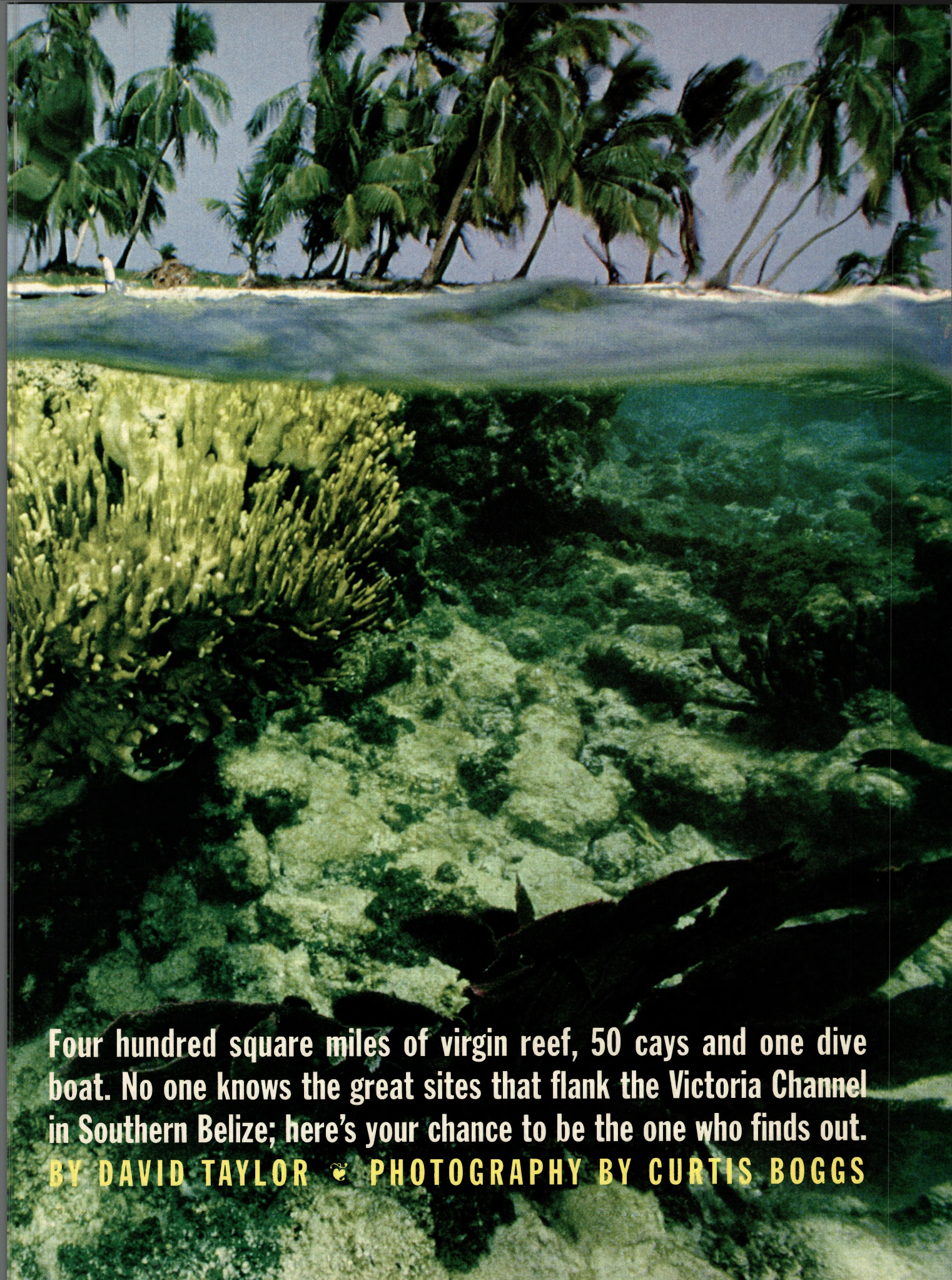
MADISON BLUE SPRINGS. Outside Madison on the banks of the Withlacoochee River, Madison Blue is Florida's newest commercial spring. Its maze of stone passageways is a favorite among cave divers, but a large cavern opening at 30 feet offers something for open-water divers as well. The river sometimes overflows in the winter, spilling brown water into the spring basin and cutting visibility to nearly nil.

HAL WATTS' FORTY FATHOM GROTTO. Located in thoroughbred country northwest of Ocala. The Grotto reaches a maximum depth of 240 feet (40 fathoms) and is used for open-water instruction as well as advanced technical dive training. The wreckage of 12 cars, one motorcycle and a 25-foot cabin cruiser rests on slopes and ledges at various depths, and fossilized sand dollars and sea biscuits cover one ledge at 40 feet.

PEACOCK SPRINGS STATE RECREATION AREA. North of Mayo, this spring system is cave-diving territory. More than 28,000 feet of passageways connect the various springs and sinks along the Suwannee River. Open-water divers may want to take a look at **Orange Grove Sink**, which is covered by a layer of duckweed much of the time. The bottom slopes off to 60 feet and a 15- by 7-foot cavern entrance cuts into the north wall of the sink at 53 feet.

An underwater photograph showing a vibrant coral reef in the foreground. The coral is primarily green and yellow, with some darker patches. Above the water surface, a line of palm trees is visible against a clear blue sky. The water is slightly rippled, and the overall scene is bright and clear.

DiscoveryChannel



Four hundred square miles of virgin reef, 50 cays and one dive boat. No one knows the great sites that flank the Victoria Channel in Southern Belize; here's your chance to be the one who finds out.

BY DAVID TAYLOR 🐠 PHOTOGRAPHY BY CURTIS BOGGS

I confess: the wild dolphins got boring.

Each morning as we sped across Belize's inner lagoon—a 20-mile-wide holding tank between the mainland and barrier reef—pods of Atlantic bottle-nose and spotted dolphins came to play in our bow's pressure wave. Belizean divemaster Brian Young would announce "Dolphin Time" and we'd jump in to play with these fleshy bullets that darted beneath and between us, sometimes pausing to hang upside down or mimic our awkward movements, all the while pinging us with clicks. It was great fun for a while, but I grew impatient: the whale sharks were waiting.

During May and June, in the days following full moons, whale sharks migrate to the southern end of Belize's barrier reef to feed and mate. Up to 25 sightings a day are made. One even swam alongside the boat, where Malcolm, our captain and Brian's brother, stood atop its polka-dot back and rode it like a California surfer-dude.

I especially wanted to watch them feed. Whale sharks sometimes hang vertical in the water column, mouth near the surface, and wait for the birds and bonito to chase the small fry its way. At the right moment the whale shark opens its mouth wide and sucks in fish like the world's largest Hoover upright.

My impatience with the dolphins was also fueled by the Columbus syndrome: Because we were diving and naming scuba-virgin reefs every day, I thirsted to claim new worlds in the name of diving worthies: Mike Nelson's Drop-off, Cousteau Cut, Sheck's Reef. In Southern Belize, you name your dive site—literally.

And if discovery of the unexpected

is one of diving's greatest thrills—the thing that helps us endure equipment-laden treks through Miami International, the choke of diesel fumes, the take-no-prisoners tropical pests, the Third World's nonchalant, every-hombre-for-himself attitude toward air travel—then Southern Belize offers enough to help us endure an army of no-see-ums and a month of mañana.

See what I mean about dolphins?

One hundred miles south of Belize City—a 40-minute plane ride aboard one of Maya or Tropic Air's single-engine bushwhackers—lies the breathtakingly short, red-dirt runway of Placencia Peninsula. Hanging like a loose thread from the mainland, the peninsula is scheduled to become an island during the next hurricane. It's also a last stop of sorts. South of Placencia, there is only the outpost of Monkey River Village (six huts and a police station at the mouth of Monkey River) and Punta Gorda: a slightly notorious port village where the distinctions between

Belizean, Guatemalan and Honduran become obscured by jungle and the fierce independence of Indians clinging to a centuries-old lifestyle.

Placencia serves as a staging/rest area for anthropologists studying those traditional cultures, archaeologists digging among the hundreds of

Mayan ruins, and naturalists exploring the largest tracts of virgin rain forest remaining in Central America. And, as of last year, adventurers of the bubble-blowing variety.

Although Placencia's three dive operators—Rum Point Divers, Placen-

cia Divers and Turtle Inn Divers—have been running small fishing dories for years, only last year did Rum Point acquire a dive craft (a Pro-42 with jet drive) capable of exploring the vast tracts of reefs both inside the lagoon and outside the barrier reef.

With more than 400 square miles of reef in the Placencia area alone, and rarely more than two dozen divers visiting the peninsula at one time, you don't need a calculator to figure it out: This is Belize's most remote, virgin diving territory, where you have a far better chance of snorkeling with dolphins and surfing on the backs of whale sharks than you do of seeing another dive boat.

Since its independence from Britain in 1981, English-speaking Belize has become a center for conservation, positioning itself as Central America's leader in the burgeoning ecotourism industry. Belizeans have placed 70 percent of their land under some form of environmental protection and slapped a moratorium on development of its offshore cayes until completion of a coastal-zone management study.

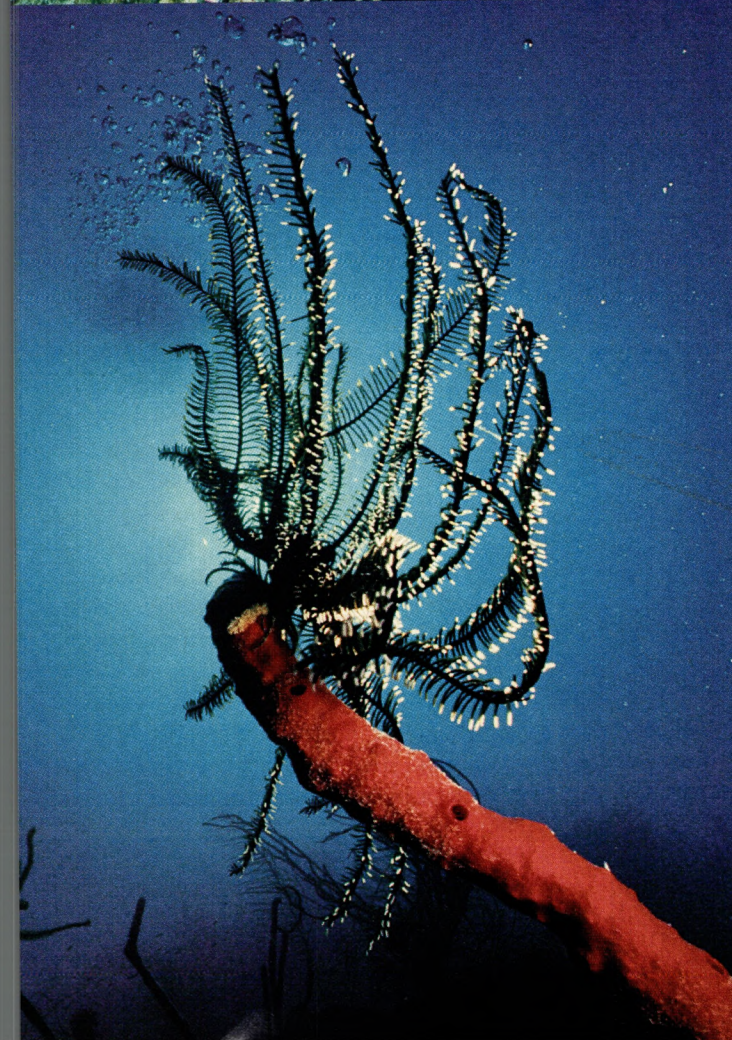
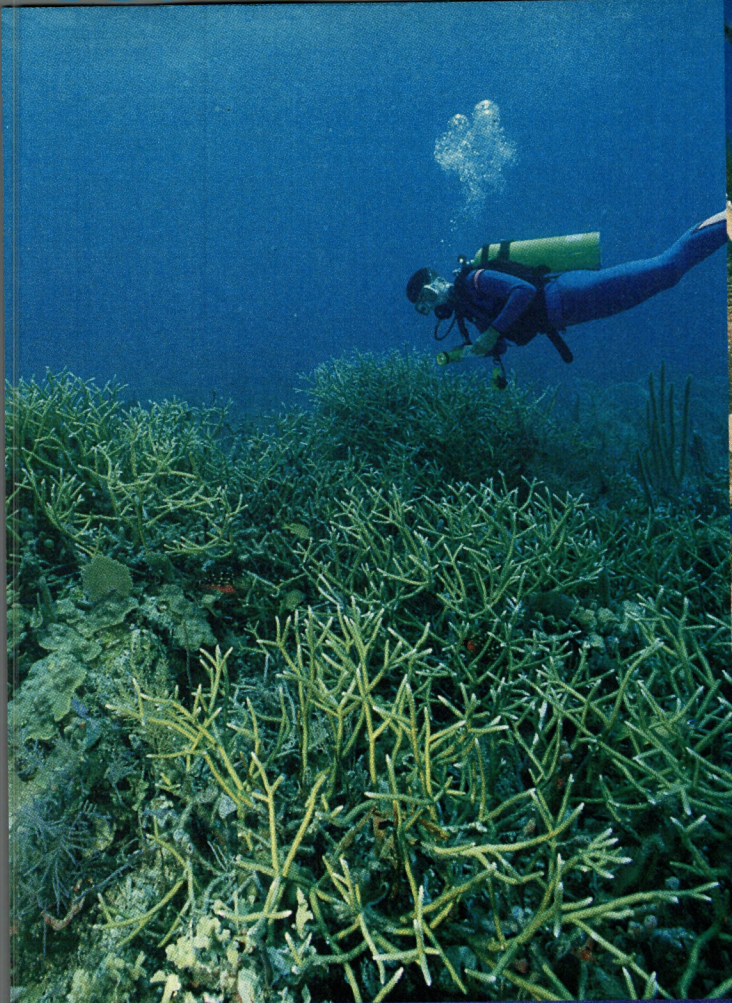
They have a lot to protect: more species of birds (550) than in all of North America; the last refuge of the jaguar, the New World's largest cat; and a 150-mile-long barrier reef, longest in the Western Hemisphere and anointed by an international panel of marine scientists as one of the seven underwater wonders of the world.

Coming upon the barrier reef from the channel side is indeed akin to arriving at the shores of a wondrous new continent. The reef line rises like a land-mass above the lagoon and stretches north and south as far as the eye can see, foam splashing skyward as the waves carom off it. With this kind of natural attraction as the draw, you expect to see a boardwalk and T-shirt concessions. Instead there are only wind, waves and whales for company.

As our boat enters the cut

Welcome to Belize's most remote and virgin diving, where you have a better chance of surfing with a whale shark than seeing another dive boat.

CLOCKWISE FROM TOP LEFT:
AN ENDLESS FIELD OF STAGHORN CORAL ON A FARO REEF IN BELIZE'S INNER LAGOON; BLUE BELL TUNICATES AND FROND OYSTERS MIX IT UP AT BRIAN'S DROP-OFF; THE BASKET SPONGES AT NORTHERN REEF DROP-OFF SEEM LARGE ENOUGH TO SUPPORT THEIR OWN ECOSYSTEM; A BLACK AND WHITE CRINOID BATHES IN THE CURRENT AT MOHO CAYE.



Placencia Dive In

► **LOCATION AND TOPOGRAPHY:** Placencia Peninsula, 70 miles south of Belize City, is an 11-mile strip of sand with mangrove lagoons on one side, beaches on the other, and secluded resorts sandwiched between. Offshore sit more than 50 wet (mangrove) and dry cayes—a few inhabited, most not. Its 20-mile distance from shore makes the southern end of Belize's 150-mile-long barrier reef, the hemisphere's longest, less affected by human impact than any other portion.

► **CLIMATE:** Subtropical, with a brisk prevailing wind from the Caribbean Sea to keep you cool at night. Temperatures average between 75F and 90F. January through April are hot and dry; count on occasional precipitation from June through December, Belize's rainy season.

► **WATER TEMPERATURES AND VISIBILITY:** Temps average 80F in the winter and 84F in the summer. Offshore waters are clearer in late spring and summer with visibility averaging 100 feet, often more on the barrier reef; plankton and rough seas can sometimes diminish water clarity in the lagoon to 50 feet or less.

► **DIVING SKILLS:** Because of swells and extreme drop-offs, diving on the outside of the barrier reef is best suited to intermediate and advanced divers. The faro, fringing and patch reefs of the inner lagoon offer excellent diving for all levels.

► **CURRENCY:** The Belizean dollar; at press time, Bz\$2=US\$1.

► **LANGUAGE:** English is the official language; Spanish is also widely spoken.

► **DOCUMENTS:** All visitors must have a passport and a return or ongoing ticket. Visas aren't required for citizens of the United States, Canada, Mexico, the United Kingdom and most European countries.

► **ELECTRICITY:** 110/120 volts AC.

► **GETTING THERE:** American (800-433-7300), Continental (800-231-0856) and TACA International (800-535-8780) fly into Philip S. W. Goldson International Airport in Belize City. At press time, weekday rates based on a 3-day minimum stay for tickets purchased at least 30 days in advance from a sampling of U.S. cities: Houston, \$366, Miami, \$394, Chicago, \$659, and New York and Los Angeles, \$724. Once in Belize City, you'll hop a flight aboard Tropic Air (800-422-3435) or Maya Airways (800-552-3419) to Placencia (\$110 round-trip on either airline).

► **ACCOMMODATIONS:**

• Rum Point Inn, the area's only PADI International and NAUI Dream Resort, should be the first choice of serious divers. Its 42-foot

jet drive boat, *Auriga*, is the only such craft on the peninsula. Rum Point's unique free-form concrete cabanas offer privacy, cool ocean breezes, lots of space and hot water. Summer rates: \$1,250 per person; winter: \$1,460. Includes round-trip air, seven nights, five days diving (2-tank boat trips, unlimited shore), three meals daily, unlimited use of kayaks, bicycles, sailboats and sailboards. Gear rental, gear sales, PADI and NAUI instruction (call 800-747-1381 or 011-501-6-23239; fax: 011-501-6-23240).

• Nautical Inn provides an excellent backup if Rum Point is booked. Located in the Garifuna village of Seine Bight, owner Ben Ruoti provides free transportation to Rum Point Divers (2 miles). Nautical Inn's rooms are the newest and most modern on the peninsula—and the only air-conditioned ones. Summer rates: Double room is \$75 per night; winter: \$90 per night. Three meals daily are optional: \$30 per day. Unlimited use of canoes and Hobie Cats (phone/fax: 011-501-6-22310).

• Kitty's Place is a traditional favorite, offering eight rooms (two share baths) and family apartments in colonial Belizean hardwood structures. Spare but comfortable. No frills. On the premises, Placencia Divers operates a 25-foot fishing dory with bucket seats, comfortable for lagoon-side diving only. No instructor at press time. Summer rates: rooms, \$50 per night; apartments, \$75. Winter: \$63 and \$93. Meals extra (phone: 011-501-6-23227; fax: 011-501-6-23226).

• Other accommodations can best be described as "modest," offering low prices and summer camp amenities. They include Turtle Inn (303-444-2555), Sonny's Resort (011-501-6-23103), Seaspray Hotel (011-501-6-23148), Singing Sands Inn (011-501-6-22243).

► **TOPSIDE DIVERSIONS:** Cockscomb Jaguar Reserve—The only jaguar reserve in the world, Cockscomb's rain forest is filled with birds and bromeliads. Be sure to visit Maya Center, the Mayan village charged with overseeing the reserve.

Mayan Ruins and Villages—Across the Belizean savanna lies the Maya Mountain foothills. In Golden Stream, a Mayan village, you can swim or purchase embroidered handicrafts. The ruins of Nimli Punit and Lubaantun—scenes of ancient Mayan ceremonial sites—lie to the south.

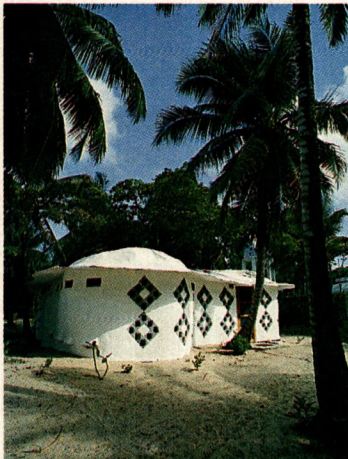
Placencia Village—This Creole fishing village is quickly developing a tourism infrastructure—restaurants, bars, guest houses and market and gift shops are popping up, and local youths will act as tourist guides.

Seine Bight Village—This Garifuna village has its own language, Garifuna, and a distinctive culture. Two-and-a-half miles north of the Rum Point Inn, the village is a pretty place for a walking tour.

► **EMERGENCY NUMBERS:** Police, 23129, and ambulance and Dangriga Hospital, 05-22078.

► **RECOMPRESSION CHAMBER:** Subaquatic Safety Services in San Pedro on Ambergris Caye, 011-501-2-62851/62852.

► **FOR FURTHER INFORMATION:** Contact the Belize Tourist Board, (800) 624-0686.



RUM POINT INN'S IGLOO CABANAS
OFFER DIVERS A COOL RETREAT.

called Gladden Entrance, the swells are immediate. The open sea's energy builds against the reef, producing 10-foot swells that slap us around like we're nobodies. Past the cut, the swells lay down enough for us to gear up and plunge beneath the wind-feathered waves. This dive site is one of the few in the Placencia area that has a name: Northern Reef Drop-off, and they aren't kidding.

No pretty little tropicals flitting about. This is the open ocean. To prove it, a trio of greater amberjack flash across the ledge at 40 feet. Out in the vague blue distance we watch a 6-foot hammerhead circle twice before identifying our bubbles and twitching away, disappearing over the wall. We follow

and get caught by surprise. The ledge is actually an overhang of an undercut vertical wall, and suddenly we're over 3,000 feet of steely, unforgiving blue. Next stop, China.

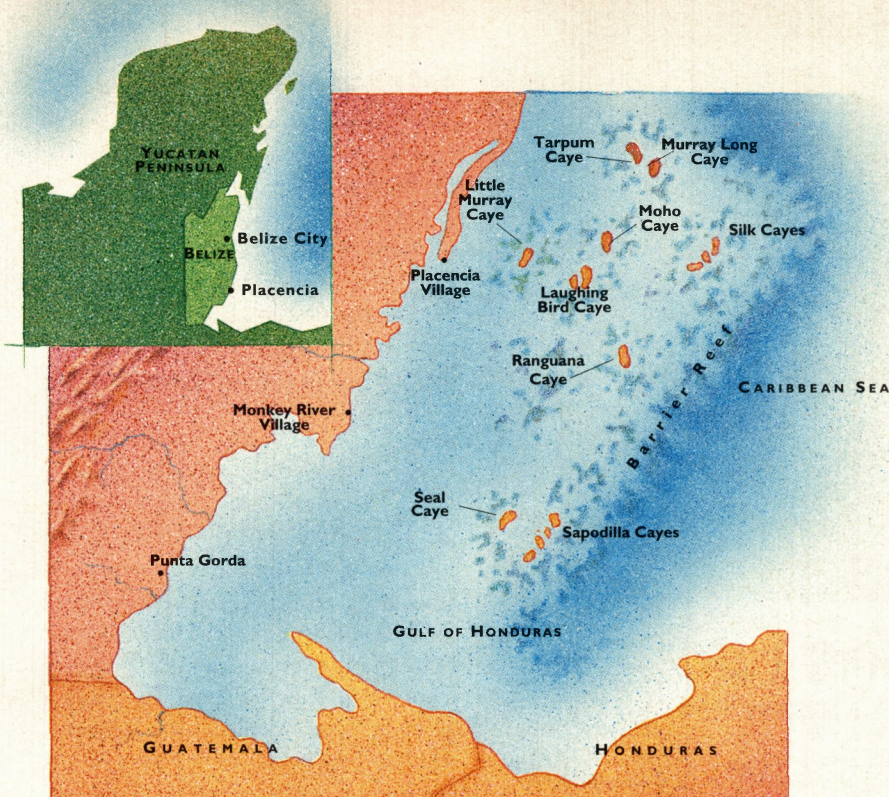
I hang motionless, letting the shock of the point-nine adrenaline moment pass, and suddenly realize this is why I dive—this feeling of tranquility as I float above the unfathomable depths, wrapped in a new skin, letting the ocean's wildness obliterate the past and leave only this single moment of freedom, this present tense becoming more present.

Brian taps his tank. He's pointing to a photogenic 6-foot-wide barrel sponge that supports its own ecosystem of neon chromis and gobies, blackcap

basslets hanging upside down, crabs and brittle stars clacking around inside. Another sponge even has a creole wrasse cleaning station: an entire school hovering around the barrel, taking turns hanging vertical to get vacuumed by juvenile Spanish hogfish.

Some of the wall's undercuts are so deep they form canyons filled with feral things: two king mackerels in the 6-foot range, schools of dog snapper and some 5-foot cubera snapper down at 130 feet. We look for a jewfish usually seen here, but can't find him even in the 200-foot visibility that's normal for this site, except during a new moon when the southern currents run.

Veterans of Cayman and Cozumel wall diving will notice a distinct differ-



ence on the drop-offs of this barrier reef. Rather than the massive coral monoliths rising from the deep, this reef was formed by the sinking of Belize's landmass along a series of slip-strike faults. The barrier reef is actually the edge of the continental shelf gradually bearded over by soft and hard corals that have been fattened on the nutrient-rich open ocean for 8,000 years. Elephant ears, indeed.

Besides vertical walls plunging to the Orient, the barrier reef's southern portion—farther from the mainland than any other section and therefore less visited by humans and runoff—also supports spur and groove formations like those at Flat Swash. The coral ridges slope to the drop-off's lip and form canyons where groupers (December to January) and snappers (March to May) come to spawn.

As we drift dive over the long fingers at 75 feet, it's clear that the big boys are staging a comeback. We see black, tiger and Nassau groupers in the 40- to 50-pound range and a school of 20- to 30-pound dog snappers swimming with clouds of chub, as they usually do.

Flat Swash's open ocean location is evident as we kneel in the sand of one canyon and let our bubbles attract a swirling school of horse-eye jacks, so

thick they reduce the 150-foot visibility to zero. There are also loose schools of black durgons, an eagle ray and a few savvy barracuda, who get a kick out of swimming up and flashing their saw-blade teeth at you. This is the same animal that will follow an errant spear to the bottom, hover over it and dare you to retrieve it. Brian and Malcolm, both fishermen before converting to diving, say it's best to get another spear.

At its southernmost tip in the Sapodilla Cayes, a mere 30 miles from Guatemala and Honduras, the barrier reef does a curlicue, ending its long signature with a flourish. The hook offers a chance to dive both sides of the barrier reef as it curls up and into the protected inner lagoon near Seal Caye.

Anchored in a rare sandy patch 200 yards offshore in 10 to 12 feet of water, we prepare to become the first-ever scuba divers on what Brian—who obviously

A MANGROVE TREE'S SPONGE-ENCUSTED ROOTS DIG INTO THE MUD OF TARPUM CAYE.

Monkey See, Monkey Doo

What weighs 15 pounds, roars like a lion and can bean you with a handful of feces from 50 feet? You guessed it: howler monkeys.

Ten tribes of them live in the jungle surrounding Monkey River, 15 miles south of Placencia. A day trip to be abused by—oops, to visit—they have become a popular diversion for the handful of tourists and divers who venture to Southern Belize.

Rounding Monkey River's first bend, whatever remnant of civilization you found in Monkey River Village—a tiny collection of clapboard huts perched on stilts at the river's mouth—is swallowed utterly by the jungle rising from the banks. This is no gussied up, *Mosquito Coast* version for Harrison Ford wanna-be's. This is the real thing, complete with oropendula birds, whose droopy nests sway from mahogany trees, giving a warbly hoot as you drift by. Their song blends with the calls of kingfishers, white ibis, falcons and hawks soaring above.

But all of those sounds are absolutely obliterated by the howler monkey's roar: a deep-throated primal scream that can be heard 5 miles away. The 10 communities of monkeys use the howls in a complex system of communication, passing information up and down the 20-mile river from tribe to tribe.

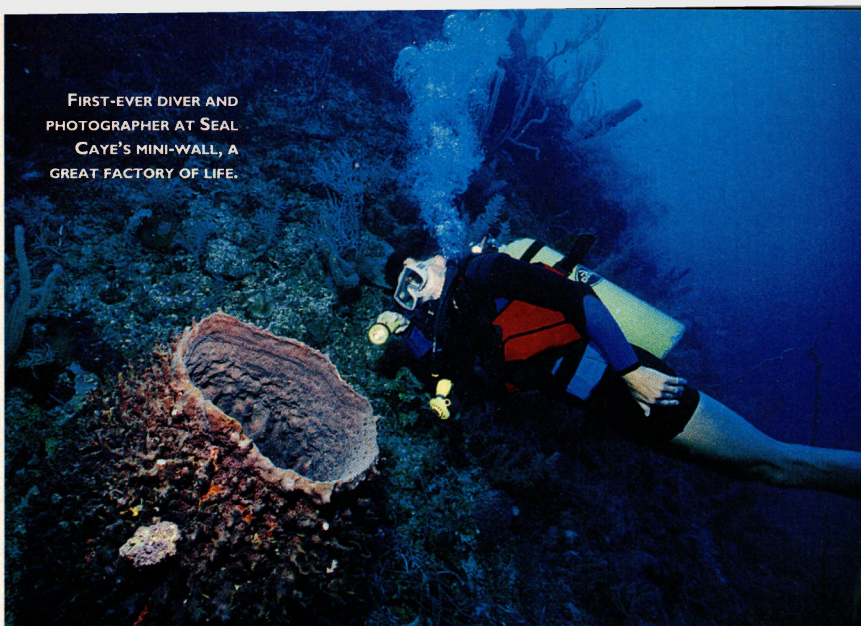
During the early morning and late afternoon the monkeys can be observed drinking at the river's edge. At other times you must cut the boat's engine, listen for a tribe that is close to the river, then slather on the deet for the trek into their jungle hideout. But take care: the dark, wiry primates jealously guard their privacy by sometimes charging at you if you come too close, throwing sticks or even their own monkey-doo.

We were lucky—sort of. Our guide Malcolm spotted a group in the tree tops near the river. We scrambled up the muddy bank and hacked our way toward them. Photographer Curtis Boggs and I stole upon the howlers with consummate cunning. Finally beneath their roost, Boggs lifted his camera for a patented telephoto close-up and zoomed in on something soft and dark suddenly falling directly into his lens.

Someone—or something—laughed: a mocking, howling sort of sound.



FIRST-EVER DIVER AND
PHOTOGRAPHER AT SEAL
CAYE'S MINI-WALL, A
GREAT FACTORY OF LIFE.



Take Me To Your Faro:

Eight More Don't-Miss Dives in Southern Belize

In the sandy canyons of **Jellyfish Valley**, part of a spur and groove formation, lie locally abundant upside-down jellyfish. Each hosts a colony of cleaner shrimp and makes a heart-beat-like sound as it flaps to the bottom. The spurs are covered by mounds of fluorescent, brown and white encrusting zoanthids, and frond oysters mix with blue bell tunicates on some of the largest sea rods in the Caribbean.

Above **Moho Caye**, clouds of frigate birds hang motionless in the air. Below them, you hang motionless at 25 feet over football fields of lettuce and staghorn coral, watched over by mackerel, houndfish and thousands of testy damsels darting at you from the horns. Photo tip: be ready for the tons of golden crinoids perched in the open.

The faro reef at **Lobster Garden** drops from 25 feet to 110 in a series of coral terraces. The spiny "bugs" that give the site its name eye you from every level. In the sandy shallows look for slippery dicks, male and female razorfish, and three types of sea cucumbers: furry, tiger tail and donkey dung. Don't get in the way of the 30-pound dog snappers.

Palm-studded **Murray Caye** offers a fringing reef loaded with tropical juveniles that prefer these nutrient-rich shallows. Beneath the layer of minnows swim miniature gray angels, schoolmasters, tobacconfish and barracuda. Special treat: a colony of the relatively rare chalk bass.

The mini-wall at **Long Coco Spit** begins at 25 feet and drops to a series of coral pinnacles at 75 feet. Along the wall's sheets of plate coral and collage of tube, barrel and vase sponges, you'll find cubera and dog snappers, groupers and hogfish. Bulb anemones dot the pinnacles like Christmas lights.

Rock Head on the barrier reef's front side is a favorite spot for spawning mutton and cubera snapper, April through June. They gather at the ends of the spurs and grooves that angle down to 70 feet. The cut in the reef is a choke-point for nutrients that also draw eagle rays, some major league pufferfish, nurse and reef sharks.

White Hole at Ranguana Caye is a broad sandy area encircled by high mounds of hard coral. A cut in the coral leads to the drop-off and provides an entrance for the big fish and rays that are attracted to white holes—favored as fishing spots. Look also for golden spot moray eels.

At **Murray Long Caye Drop-off**, the coral heads rise from 80 feet up to 50 feet to form swim-through canyons that parallel an abysmal 3,000-foot drop-off. Schools of lane snapper feed on the shrimp in the mud—a fact of some interest to fishermen and photographers tracking a species that can be quite abundant here.

lacks imagination when it comes to such things—prosaically christens Seal Caye Wall. Ho-hum. Another day, another virgin reef.

At 15 feet we swim above tightly bunched hard and soft corals and over a ledge coated with sea fans and boulder star coral. Suddenly we are staring

straight down to a 240-foot bottom. The mini-wall is undercut and pristine, a great factory of life: droopy finger sponges, wide plates of fragile saucer coral, thickets of rope sponge, a forest of black coral at 20 feet, branching tube and vase sponges, a maze of wire coral threatening entanglement. As I

look up the wall, the riot of shapes and colors blend together into a vision of creation, an Eden of sorts seen now for the first time.

As we kick along the wall, an eagle ray sails overhead, flying into the vast blue like a swallow in the clear morning sky. By the time we surface, photographer Curtis Boggs has the same beatific look on his face as a Muslim returning from Mecca.

As if one of the planet's premier barrier reefs weren't enough, Belize's inner lagoon also sports one of only three faro reef systems in the world. You'd have to travel to the Solomon Islands to find the other two. A faro is an angular atoll that rises from the continental shelf, not from a seabed. These "shelf atolls" are steep-sided and enclose a central lagoon, just like oceanic atolls (of which Belize also has three; see "Triple Play," April '94). In Belize, the faroes are separated from the mainland, the barrier reef and each other by 120-foot channels, the widest of which is Victoria Channel.

For our first faro reef dive, Brian takes us to another virgin spot. We thank him by naming it **Brian's Drop-off**. On the outside of the faro's lagoon we drop down to a 25-foot soft coral garden. One gauge of a reef's virginity is, as usual, quite evident: softball-sized clusters of blue bell and orange bulb tunicates hang on the sea rods and sea fans like party balloons. Boggs' shutter begins whirring at the golden crinoids growing in wild abandon, actually perched out in the open, sometimes several per sponge or head of lettuce coral.

The fields of lettuce and staghorn coral stretch down to 33 feet, where a vertical wall falls to the muddy bottom at 100 feet. Since the entire inner lagoon area has a mud instead of sand bottom, visibility at the faroes varies considerably according to wind and tide conditions, usually averaging 60 to 80 feet—a fact that concerns divers but certainly not the wildlife: Belize's faroes support the full gamut of Caribbean coral reef life, especially the juveniles that find the shallow and protected lagoon to be a safe place to reach puberty.

On Brian's Drop-off, juvenile angels and (*Continued on page 109*)

Dive Bonaire

What would you call a 112-square-mile island surrounded by a dense reef so close to shore that all you had to do was pick a spot and wade into a fantastic dive? You might call it "The Big Easy." Locals call it Bonaire.

This sister island to Aruba and Curacao rises from the Caribbean just high enough to provide a convenient place to change tanks between dives. The leeward west coast is lined with spectacular sites for all skill levels in warm, calm water. Most travel packages offer unlimited air for shore diving. Result: no boat, no divemaster and no schedule to keep—unless you want them.

Part of the Netherlands Antilles, Bonaire sits 50 miles north of Venezuela, 86 miles east of Aruba and 1,720 glorious miles (and a world) away from New York City. Bonairians decided early to protect their natural endowment. They banned spearfishing in 1971 and pioneered the use of mooring buoys to prevent anchor damage. As early as 1979, they enveloped the entire reef in the protective embrace of a national marine park. The result is a reef packed with diverse marine life that has become a "must visit" for 20,000 globe-



"LOOK BUT DON'T TOUCH": BONAIRE'S GOLDEN RULE PRESERVES CORAL REEFS IN ONE OF THE CARIBBEAN'S BEST MARINE PARKS. FOR MORE INFORMATION, CONTACT TOURIST CORPORATION BONAIRE (T.C.B.), 444 MADISON AVE., SUITE 2403, NEW YORK, NY 10022, (800) 826-6247 (U-BONAIRE), (212) 832-0779, FAX: (212) 838-3407.



▲ Black Durgon Inn/Pilot Fish Apts.



▲ Buddy Beach & Dive Resort



▲ Captain Don's Habitat



▲ Divi Flamingo Beach Resort & Casino



▲ Harbour Village Beach Resort



▲ Sand Dollar



▲ Sunset Beach Hotel



▲ Coral Regency Resort



▲ Carib Inn

trotting divers annually.

WATER CONDITIONS: Bonaire is known for consistently excellent diving conditions year-round, a reliable choice even in the winter months. Located outside of the hurricane belt, Bonaire offers summer water temps of 80F, winter temps of 75F and vis between 60 and 100 feet. With less than 20 inches of rainfall annually, there's little runoff to cloud visibility or disturb coral. On the leeward west coast, waves and chop are usually well under 3 feet. Currents run parallel to shore and are usually less than 1 knot. The windward east coast is a different story, mixing it up with 5- to 10-foot waves and strong currents (see "East Coast Bonaire," page 53).

REEFS: Fringing the entire island is a riotous mix of hard and soft corals that start nearly at the water's edge and slope down typically to 33 feet before dropping off again to deep blue. From top to bottom, it's a Caribbean reef roll call: black coral, brain coral, cavernous star coral, deepwater gorgonians, elkhorn coral, fire coral, flower coral, leaf coral, mountainous star coral, purple tube sponges, sea fans, sheet coral, staghorn coral and yellow pencil coral—all present and accounted for.

Diversity rules in the underwater topography of Bonaire. **Boca Bartol** and **Playa Benge** located in the Washington-Slagbaai National Park offer spur and groove coral formations. Toward the center coast of the island, **La Dania's Leap** and **Small Wall** offer vertical wall diving. South of Kralendijk, from Punt Vierkunt almost to the saltworks, the reef splits into a double line separated by a sand channel of varying widths.

SHORE DIVING: Diving and snorkeling on the leeward west coast is as simple as swimming out just about anywhere from shore. It's literally a stroll in the park—the Bonaire Marine Park that protects every polyp of coral, every scale of fish, and every foot of sponge from water's edge to 200 feet down. The park means restrictions: a \$10 fee for a diving permit good for one year, no collecting, no spearfishing and no anchoring; but it also means freedom. Sites are mapped on the Marine Park guide, and easy to find thanks to large yellow and black markers along the road and buoys in the water. Rent a car, grab some tanks and just try *not* to have a good dive. Of course, there's plenty of boat diving as well. Most operators schedule three boat dives a day.

You will need to take a 15- to 20-minute boat ride to some of the more famous sites, especially around Klein Bonaire, a barren islet a half-mile west of the capital city of Kralendijk. Conditions here are much like the

west coast but the sites have their own unique features and charm.

WRECKS: Here, wreck diving has one name: **Hilma Hooker**. The freighter lies in about 100 feet of water in the sand channel of the double reef system and is being colonized by soft corals and sponges and visited by barracuda and a green moray eel.

PHOTOGRAPHY: It's a simple

See page 24 for 21 money-saving packages in Bonaire



equation: lots of fish plus lots of coral equals plenty of underwater photo ops. The island has been the site of photo shootouts—most recently the *Rodale's Scuba Diving Underwater Video Challenge*—and **Town Pier** in Kralendijk is billed as “the world’s greatest macro dive.”

NIGHT DIVING: Town Pier again takes the cake but all of Bonaire’s shore dives are “open all night,” and operators offer unlimited air 24 hours a day.



Mo' Better Bonaire: **25** Fabulous Dives

DEPTH:
30-150 feet

SKILL LEVEL:
Advanced

ACCESS:
Shore

BOCA BARTOL

This cove on the northern tip of the island offers two very different dives for those who can handle rough surf. Enter on the south side to swim out along spur and groove formations covered by leaf coral, fire coral, elkhorn coral, encrusting anemones and sea fans. Enter on the north side for a deep dive past the drop-off with large tiger and Nassau grouper, dog snapper, ocean triggerfish and big schools of horse-eye jacks. Coral islands between 120 to 143 feet are colored with sponges, deep-red gorgonians and black coral.

DEPTH:
40-130+ feet

SKILL LEVEL:
Intermediate to Advanced

ACCESS:
Shore or Boat

PLAYA BENGE

Surf and current cut through spur and groove formations that shelter the brilliant yellowtail damselfish, redlip blennies, potbellied glassy sweepers and occasional nurse sharks. A cave on the fifth spur as you swim north is Grouper Central. Expect to say hi to tiger, Nassau, marbled and yellowfin groupers as well as southern stingrays. The spurs will point you to deeper portions of the reef slope covered with mountainous star and giant brain coral, deepwater gorgonians and ultimately a sponge-splattered wall between 133 feet and 160 feet. Tube and tub sponges, deepwater gorgonians and black wire coral and pink varieties of black coral reward those with the skills and training to dive that deep.

DEPTH:
15-130+ feet

SKILL LEVEL:
Novice to Advanced

ACCESS:
Shore or Boat

NUKOVE

A barrier of elkhorn coral stands guard over this isolated site's pleasures. Swim through the opening between the broad branches and the reef gives way to staghorn, yellow pencil, giant brain, leaf and fire corals. Look for a giant purple tube sponge with 51 tubes swarming with barracuda, black durgon, big bar jacks and scrawled filefish.

DEPTH:
20-130+ feet

SKILL LEVEL:
Novice to Advanced

ACCESS:
Boat

LA DANIA'S LEAP

What this vertical wall lacks in fish life, it makes up for in corals. Interspersed with coral buttresses, the walls sprout black wire coral, flattened sheet coral, cavernous star coral, sponges and gorgonians. Admire the thick growths of sun anemones but don't touch. An easy dive that also offers depths for more advanced divers.

HOW SKILLED ARE YOU?

Novice: Someone in reasonable physical condition who has recently completed a basic certification course, or a certified diver who hasn't dived recently or who has no experience in similar waters.

Intermediate: A certified diver in excellent physical condition who has been diving actively for at least a year following a basic certification course or who is experienced diving in similar waters.

Advanced: Someone who has completed an advanced certification course, is in excellent physical condition and has been diving recently in similar waters.

DEPTH:
20-110 feet

SKILL LEVEL:
Novice to Advanced

ACCESS:
Boat

RAPPEL

A wind-swept cliff plunges under water to 30 feet and is covered with a brilliant mix of color from coralline algae, orange cup corals and encrusting sponges. The upper slope boasts large boulders of mountainous star and giant brain corals and the lower slope is shingled by sheet and scroll corals. Hidden in the mix are green moray eels as well as the occasional spiny lobster and squid, while fish life includes marbled grouper, spotted trunkfish and yellowfin grouper.

DEPTH:
15-130+ feet

SKILL LEVEL:
Novice to Advanced

ACCESS:
Shore or Boat

1000 STEPS

Named for the steep man-made steps leading to get to the water's edge. There are actually only 64 steps, but it feels like a thousand. Your aerobic efforts will pay off with a rare wildlife display including octopus and golden coney. Cleaning stations manned by juvenile Spanish hogfish and bluehead wrasses dot the mix of hard and soft corals including mountainous star coral and large purple tube sponges. Bring a light to check hollowed-out bases of coral heads for the uncommon shovelnose lobster.

DEPTH:
20-130+ feet

SKILL LEVEL:
Novice to Advanced

ACCESS:
Shore or Boat

SMALL WALL

This sheer wall from 40 to 70 feet is a sheer delight of corals including black wire, fungus and cavernous star coral and encrusting gorgonians. In small caves and holes of the deeper drop-off, you'll meet a massive green moray who occasionally grants a photo session. Night dives attract large tarpon who use the edge of divers' lights to hunt by.

DEPTH:
20-120 feet

SKILL LEVEL:
Novice to Advanced

ACCESS:
Shore

LA MACHACA

A sunken fishing boat resting upside down in 33 feet of water marks this site just offshore from Captain Don's Habitat. The boat's crew now includes black margates, black durgon, spotted moray eels and tiger grouper. Duck down to the sand terrace at 120 feet to see garden eels dining on current stew. Mustard hill and lush elkhorn coral are common as are schools of surgeonfish, parrotfish, yellow goatfish, trumpetfish and Spanish hogfish.

DEPTH:
10-90 feet

SKILL LEVEL:
Novice

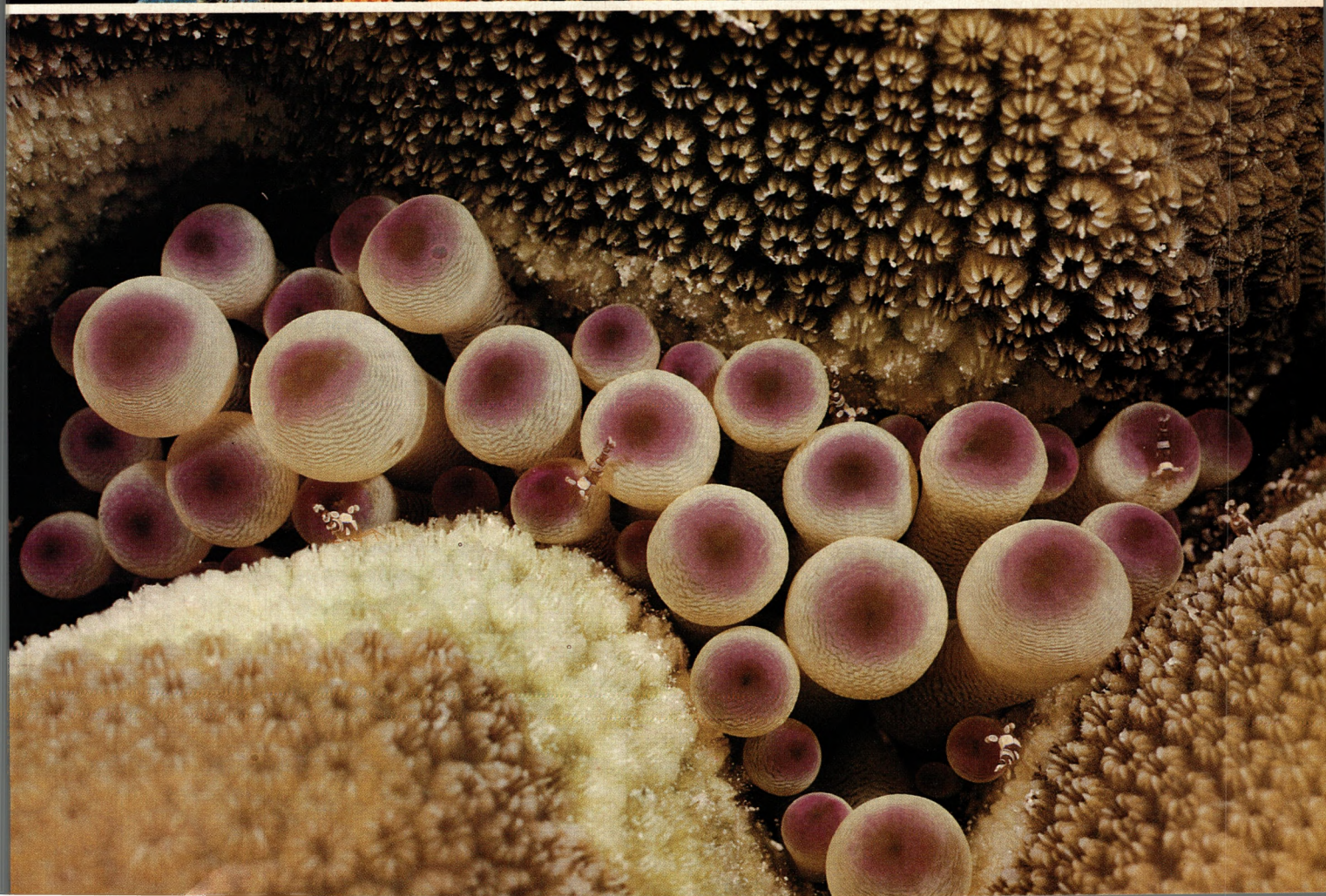
ACCESS:
Boat

SOMETHING SPECIAL

A sand terrace at 60 feet is known for its bumper crop of garden eels sprouting from the sand. Along the reef slope is a marketplace of color including purple bleeding sponge and orange colonial anemones where tarpon, creole fish, grunts, mahogany snapper, scorpionfish, spotted moray eels, schoolmasters, sergeant majors, Bermuda chub and black margates do their shopping.



A BRANCHING VASE SPONGE
REACHES FOR THE SKY AT BOCA
BARTOL; COMMENSAL SHRIMP
MAKE THEIR HOME WITHIN A
GIANT ANEMONE'S TENTACLES AT
SMALL WALL (BELOW).



BONAIRE HOTELS/RESORTS

	Dive Shop on Premises	Gear Lockers	Rinse Tanks	Boat Dock	Dive Kayaks	Beach Diving	Beach Access	Snorkeling	Deep-Sea Fishing	Tennis	Sauna/Jacuzzi	Fitness Center	Restaurant	Gift Shop	Handicapped Access	Daycare/Babysitting	Supervised Activities for Kids	Late Check-in/Express Check-out	Room Service
BLACK DURGON INN/PILOT FISH APTS. P.O. Box 200, Bonaire, Netherlands Antilles (800) 526-2370, 011-599-7-5736; fax: 011-599-7-8846, (908) 583-0478	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓			✓		✓		
BUDDY BEACH & DIVE RESORT K. Gobernador N. Debroet 85, Kralendijk, Bonaire, Netherlands Antilles 011-599-7-5080; fax: 011-599-7-8647	✓	✓	✓	✓	✓		✓	✓				✓			✓				
CAPTAIN DON'S HABITAT K. Gobernador N. Debroet 103, P.O. Box 88, Bonaire, Netherlands Antilles (800) 327-6709, 011-599-7-8290; fax: 011-599-7-8240	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓		
CARIB INN P.O. Box 68, Bonaire, Netherlands Antilles 011-599-7-8819; fax: 011-599-7-5295	✓	✓	✓	✓	✓	✓	✓					✓							
CORAL REGENCY RESORT K. Gobernador N. Debroet 90, Bonaire, Netherlands Antilles (800) 786-3483, (800) 327-8150, 011-599-7-5580; fax: 011-599-7-5680	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓		✓		✓		
DIVI FLAMINGO BEACH RESORT & CASINO J.A. Abraham Blvd. 40, Kralendijk, Bonaire, Netherlands Antilles 011-599-7-8285; fax: 011-599-7-8238	✓		✓	✓	✓	✓	✓	✓	✓			✓	✓	✓					✓
HARBOUR VILLAGE BEACH RESORT P.O. Box 312, Kralendijk, Bonaire, Netherlands Antilles (800) 424-9004, 011-599-7-7500; fax: 011-599-7-7507, (305) 567-9659	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓	✓	✓	✓	
SAND DOLLAR CONDOMINIUMS & BEACH CLUB K. Gobernador N. Debroet 79, Bonaire, Netherlands Antilles (800) 288-4773, 011-599-7-8738; fax: 011-599-7-8760	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓			
SUNSET BEACH HOTEL K. Gobernador N. Debroet 75, Bonaire, Netherlands Antilles (800) 354-8142, 011-599-7-8448/5291; fax: 011-599-7-8593/8118/8865	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓		✓				

Hotels and resorts listed were recommended by dive operators. Contact the Tourism Corporation Bonaire at (800) 826-6247 or your dive travel specialist for other accommodations.
* For information and reservations at other Sunset Resorts properties, call (800) 344-4439.

DEPTH:
40 feet

SKILL LEVEL:
Novice to
Advanced

ACCESS:
Shore

TOWN PIER

You'll need every second of bottom time to take in the pilings thick with coral and invertebrates including butterprint brain coral as well as orange, green and purple encrusting sponges, purple tube sponges, touch-me-not sponges, Christmas tree plume worms, occasional seahorses, arrow crabs, redlip blennies and redspotted hawkfish. It's not called the world's greatest macro dive for nothing. Bigger fish are equally as thick in the deeper sections and include frogfish, queen and French angelfish, mahogany snapper, juvenile spotted drum, smooth trunkfish, honeycomb cowfish, trumpetfish and yellowfin mojarra, just to name a few.

DEPTH:
20-70 feet

SKILL LEVEL:
Novice to
Advanced

ACCESS:
Shore or Boat

WINDSOCK

Admire the abundant sponges and gorgonians on the way down to meet dense fish life including ocean triggerfish, tiger grouper, sergeant majors, schoolmasters and barracuda. A shallow collection of elkhorn corals and a sand beach make this a popular snorkeling spot and a relaxed dive for all skill levels.

DEPTH:
100 feet

SKILL LEVEL:
Intermediate
to Advanced

ACCESS:
Shore or Boat

HILMA HOOKER

Bonaire's premier wreck dive, this 230-foot drug smuggling freighter lies seductively on her side in the wide sand channel of the double reef system. Her massive propeller and rudder, covered in colorful soft corals and sponges, has become a popular backdrop for underwater photographs. A green moray and occasional barracuda have been spotted here. The top of the wreck lies at about 50 feet.

DEPTH:
30-100 feet

SKILL LEVEL:
Novice to
Advanced

ACCESS:
Shore or Boat

ANGEL CITY

There's no need to go much deeper than 60 feet to catch the intense cleaning station action on this reef, home to black margates and tiger grouper and blue tangs. Also here are rock hind—rare in the Caribbean—and coney and graysbys. Yellowtail snapper will swarm you like street urchins looking for a handout.

DEPTH:
10-130+ feet

SKILL LEVEL:
Novice to
Advanced

ACCESS:
Shore or Boat

INVISIBLES

We don't know why it's called Invisibles because there's plenty to see, including big formations of soft corals. The top of the first reef is in about 10 feet of water and slopes down to a sandy channel at 60 feet, where divers often find southern stingrays scouring the sand. A garden of soft corals includes bent sea rods, sea fans and porous sea rods.

DEPTH:
25-130+ feet

SKILL LEVEL:
Intermediate
to Advanced

ACCESS:
Shore or Boat

RED SLAVE HUTS

Near the southern tip of the island, this site is washed by rougher surge and current than most on Bonaire. Shore entries can be difficult but make it through and you'll swim with a swarming escort of horse-eye jacks. The deep water has a greenish tint and large snapper and grouper will emerge unexpectedly. Black coral, black crinoids and a forest of gorgonians typify the site as do big fish like Nassau grouper and gray snapper. Among the more unusual residents are schools of midnight parrotfish, southern stingrays and hawksbill turtles. If that's not enough, look for old ballast stones and anchors on the reef. Still unfound are cannons from the doomed ship *HMS Barham* which ran aground here in 1829.

	High-Season: Single	High-Season: Double	High-Season: Triple	Off-Season: Single	Off-Season: Double	Off-Season: Triple
	\$120 (1 BR apt.)	\$65 (apts. only)	\$75 (apts. only)	\$110 (1 BR apt.)	\$59 (apts. only)	\$69 (apts. only)
	\$125	\$170 (2 BR apt.)	\$210 (3 BR apt.)	\$155 (2 BR apt.)	\$190 (3 BR apt.)	\$135
	\$125	\$145	\$165	\$95	\$115	\$135
	\$69	\$69	\$89	\$59	\$59	\$79
				\$150/unit (sleeps 4)	\$180/unit (sleeps 4)	\$230/unit (sleeps 6)
				\$84-\$125	\$84-\$125	\$99-\$140
		\$315-\$725 (based on type of accommodation; not per person rate)		\$215-\$620		
	\$160-\$210	\$210-\$240	\$240-\$350	\$150-\$175	\$175-\$190	\$190-\$300
	\$110	\$110	\$120	\$75	\$75	\$85

DEPTH:
10-130+ feet

SKILL LEVEL:
Advanced

ACCESS:
Shore

WILLEMSTOREN LIGHTHOUSE

On the southern tip of the island, this site can be affected by waves and current. For the advanced diver experienced in surf entries and exits, there are brain corals big as igloos, lots of sea fans, leaf coral and smooth starlet coral to ogle. Parrotfish and surgeonfish are common at the drop-off and squirrelfish like to hide in the holes. Also look for barracuda, the occasional queen triggerfish and Nassau grouper. Abundant sea fans, porous sea rods, sea plumes and tub sponges take advantage of the current.

KLEIN BONAIRE

DEPTH:
15-120 feet

SKILL LEVEL:
Novice

ACCESS:
Boat

EBO'S SPECIAL (JERRY'S JAM)

Ebo's Special is a bounty of hard and soft corals and grouper holes on the northwest side of Klein Bonaire. This site slopes without a terrace and features two caves painted in orange, red, purple and pink by algae and orange tube coral. The house specials include trumpetfish, Spanish hogfish, sergeant majors and parrotfish.

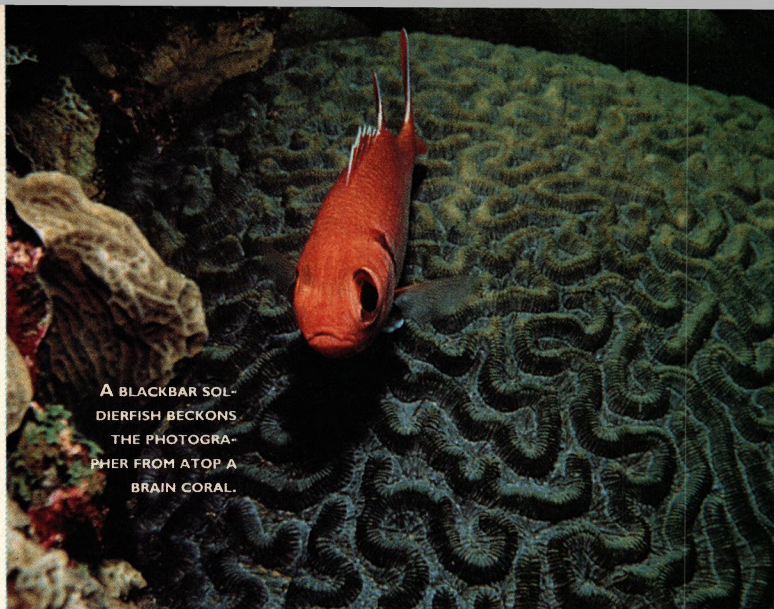
DEPTH:
33-70 feet

SKILL LEVEL:
Novice

ACCESS:
Boat

CARL'S HILL

A gorgonian jungle, a prominent buttress with a sand valley, a wall from 33 to 67 feet and a massive purple tube sponge with more than 70 tubes compete for attention at this site. Cleaning stations, tended by neon gobies at the top of the wall, have a calming affect on tiger grouper who let divers get very close before giving up their pampering. Green, purple and red cavernous star corals as well as



A BLACKBAR SOLDIERFISH BECKONS THE PHOTOGRAPHER FROM ATOP A BRAIN CORAL.

EAST COAST BONAIRE

So you think diving ought to be hard, that nothing worth diving comes easy? Then Bonaire won't disappoint if you've got the moxie and proven surf diving experience. For you, there is the east coast.

But, "you'd better be really good," says Walt Stark, manager of Sunset Beach Dive Center. "I've seen instructors come back with teeth knocked out."

Bearing the brunt of the near constant trade winds, the east coast of Bonaire is as rough as the west is gentle. Average surf: 4 to 6 feet on a good day and 8 to 10 feet on a bad one. The surf falls flat a handful of times each year. When this reversal of surf fortune occurs, boats full of locals and tourists race for the far shore to glimpse the rarely visited sites that offer bigger fish, more pelagics and sea fans enjoying the all-you-can-filter buffet. These days occur most often in late September and early October but are entirely unpredictable.

Operators willing to take tourists on the long boat ride to the east side will want to see logged experience in rough environments and may require customers to make a checkout dive to prove their skills.

Regardless of the conditions, those attempting the east coast should go with an experienced guide, especially when making surf entries.

Still want to go? Here are a few sites you might try:

SPELONK AND SPELONK WRECK

DEPTH: 90 feet; **SKILL LEVEL:** Advanced;

ACCESS: Shore or Boat

If you're the gambling type, this site is a crapshoot for pelagics along a nearly bare vertical wall. It's better as a boat dive but a surf entry is possible. Have a guide take you to the most accessible spot near the Spelonk Lighthouse. Entry involves jumping off a 10-foot cliff into a tennis-court-sized lagoon and swimming out through merciless surf and surge. An ill-timed attempt means washing up on the rocks. There's a big cave to be explored, and a big green moray to go with it. Also near the site is the steel hull of an ill-fated 1900s windjammer that lies in about 80 feet of water.

WHITE HOLE, AKA BLUE HOLE

DEPTH: 20-130+ feet; **SKILL LEVEL:** Advanced;

ACCESS: Shore or Boat

Expect to see big tarpon and turtles at 40 to 50 feet, but you'll have to fight the surf for the privilege if you make it a shore dive. A boat dive here is akin to a drift dive, not because currents sweep you along but because the boat has nowhere to anchor or moor.

PIEDRA PRETU

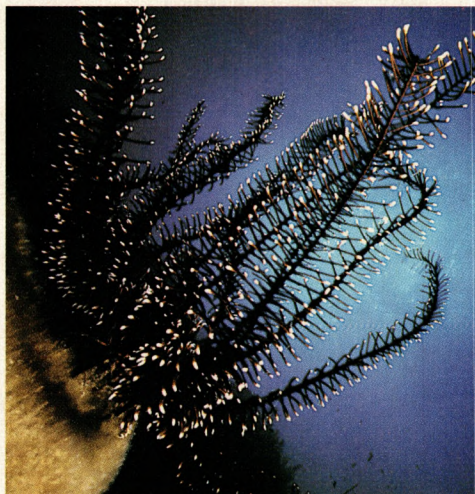
DEPTH: 20-100 feet; **SKILL LEVEL:**

Advanced; **ACCESS:** Boat

Located halfway between Lac Bay and Willemstoren Lighthouse, there is little in the way of hard corals, but a ballroom of brown and purple sea fans do enjoy the current. Another novelty is warped barrel sponges. The sponges here are 6 to 8 feet long and about 3 feet in diameter; their mouths almost warped closed from the rough currents.



FROM TOP: "THE WORLD'S GREATEST MACRO DIVE," KRAL-
ENDIJK'S TOWN PIER
HOSTS THESE ORANGE
CUP CORALS WHICH
EXTEND THEIR POLYPS
DURING THE NIGHT TO
FEED; A LIVING FOSSIL,
THE BLACK AND
WHITE CRINOID USES
ITS VELCRO-LIKE ARMS
TO GRAB FOOD PARTI-
CLES SWIRLING BY AT
EBO'S SPECIAL; A
GOLDENTAIL MORAY
POSES FOR THE
CAMERA AT PLAYA
BENGE.



encrusting sponges liven the sight with outrageous color. Look closely in branches of the sea plume and you might spot a basket starfish.

DEPTH:
30-90 feet

SKILL LEVEL:
Novice to
Intermediate

ACCESS:
Boat

MI DUSHI

A small beach on Klein Bonaire helps mark the spot of this dive which features slimy sea plumes, sea rods and encrusting gorgonians. A famous "wagon-wheel" purple tube sponge sits in about 60 feet of water. Mustard hill coral and elliptical star coral are scattered about the site. Bicolor damselfish, pygmy angelfish and redspotted hawkfish swim around the coral rubble of the bottom and small groupers like graysbys, coneys, rock hinds and red hinds are here too. Invertebrates include fire worms, arrow crabs and rare queen conch.

DAVID TAYLOR

DEPTH:
30-150 feet

SKILL LEVEL:
Advanced

ACCESS:
Boat

SHARON'S SERENITY

Potentially difficult currents make this an advanced dive, but the effort pays off with a range of sea life from seahorses to schooling fish, including scad. There are moray eels and sometimes a frogfish. At the right time of year, whale sharks make a powerful drive-by in the search for plankton.

DEPTH:
20-130+ feet

SKILL LEVEL:
Intermediate

ACCESS:
Boat

MUNK'S HAVEN

Soft corals in the shallows, beautiful fire coral formations and loads of grouper dominate this site. On the west side of Klein Bonaire, currents can be stronger than expected—making it better suited to intermediate divers.

DAVID TAYLOR

DEPTH:
25-120 feet

SKILL LEVEL:
Novice to
Advanced

ACCESS:
Boat

FOREST

A timberland of black corals at 70 to 80 feet give this site its name and will take your breath away. The reef slope is carpeted with flower, brain and yellow pencil coral. Big tiger grouper, schoolmasters, grunts, horse-eye jacks, queen and French angelfish and black durgon make these woods their home. A spotted moray eel lives in a cave at 90 feet. 🐡

BONAIRE DIVE OPERATORS

	Owens boat	Charters boats from others	Beach diving	Gear rental	Gear sales	Offers instructional courses
Black Durgon Inn Scuba Center, 011-599-7-5736	✱		✱	✱	✱	✱
Blue Divers, 011-599-7-6860	✱		✱	✱	✱	✱
Bon Bini Divers, 011-599-7-5425	✱		✱	✱	✱	✱
Bruce Bowker's, 011-599-7-8819	✱		✱	✱	✱	✱
Buddy Beach & Dive Resort, 011-599-7-5080	✱	✱	✱	✱	✱	✱
Captain Don's Habitat, 011-599-7-8290	✱	✱	✱	✱	✱	✱
The Dive Inn Bonaire, 011-599-7-8761	✱		✱	✱	✱	✱
Great Adventures Bonaire, (800) 424-0004, 011-599-7-7500	✱		✱	✱	✱	✱
Peter Hughes Dive Bonaire, (800) 367-3484, 011-599-7-8285	✱		✱	✱	✱	✱
Photo Tours, 011-599-7-8060/5390	✱		✱	✱	✱	✱
Sand Dollar Dive and Photo, 011-599-7-5252	✱		✱	✱	✱	✱
Sunset Beach Dive Center, 011-599-7-8330	✱		✱	✱	✱	✱
Touch The Sea With Dee Scarr, 011-599-7-8529			✱			

DAVID HALL

HAWAII

Pacific Paradise



ED ROBINSON/PACIFIC STOCK

Staring into the eyes of a 300-pound green sea turtle is one of those experiences that raises your heartbeat a few notches. It's the kind of close encounter that is rare in diving, but amazingly commonplace in the tropical waters of America's 50th state.

On just a single dive, you might cradle a shy octopus in your hands, stroke a friendly eel poking its head out of a hole, spot a giant manta winging through the blue void or see a whitetip reef shark lounging under a ledge. And imagine the sensation of swimming through a colony of eight or more large sea turtles, some of them perched on rocks like quiet sentinels, others hovering in front of you with evident curiosity.

Considering Hawaii's established popularity with vacationers, it's easy to take this island paradise for granted. But beneath the swaying palms and tropical resorts is a diving adventure, and every island beckons you with unique offerings.

What typifies Hawaiian diving is a plethora of geologic oddities—lava tubes, tunnels, pinnacles and blowholes. Among these formations live nearly 700 species of fish, including large pelagics such as tuna, rays and whale sharks. The best way to reach many of these sites is by boat, and each of the four largest islands has knowledgeable, well-equipped dive operators who offer daily excursions.

Oahu has the state's most popular snorkeling and diving retreat—spectacular Hanauma Bay, a protected inlet a few miles east of downtown Honolulu. But between Diamond Head and Hanauma lie a half-dozen major dive sites teeming with turtles, moray eels and anglerfish. But what really distinguishes Oahu are the shipwrecks that form artificial reefs for thousands of schooling fish. They range from the 110-foot YO-257 ("Atlantis Wreck") sunk off Waikiki in 1989 to the 165-foot-long minesweeper, *Mahi*, sunk in 1982.

The Big Island of Hawaii boasts some of

the best diving in the state, primarily because it is the southernmost island and has the most prolific coral development on its reefs. The Kona Coast represents more than 80 miles of waters sheltered from the trade winds by the volcanic peaks of Mauna Kea and Mauna Loa. Among the 40-odd sites are places like Kiawi Point, with its caves and arches and frequent reef sharks; Red Hill, an extinct underwater crater that houses a rabbit-warren of relatively shallow lava tubes; and the Kona Surf Hotel, where night lights attract a multitude of manta rays.

Maui is famous as the migration route for the playful humpback whales, whose acrobatics have thrilled boaters cruising to the neighboring islets of Lanai and Kahoolawe. One of the best places to see them during their November to April appearance is at Molokini Crater, a popular dive site that is about an hour from Lahaina by boat. Here you can swim along dramatic coral formations and spectacular dropoffs. The fish, which are accustomed to mooching handouts of bread, school in large numbers around divers, and there is always a chance of spotting porpoises.

Kauai, the Garden Isle, is less traveled than its sister islands, yet Kauai has some extraordinary dive sites, many of which have been discovered only recently. The north coast, accessible during the summer, contains pristine sites with pinnacles, caverns and arches. You might see scorpionfish, spotted eagle rays and migrating mahi-mahi at these places. Perhaps the most popular sites, however, are along the south coast at Sheraton Caverns where you can see moray and conger eels; and General Store, where you can swim through a series of lava tubes, the remnants of a ship and the domain of green turtles.

Diving in Hawaii offers a special experience for anyone from novice to expert. And with its excellent accommodations, restaurants and shopping, the traveling diver could hardly ask for more.

ATLANTIS REEF DIVERS**800-554-6267** ext. ROD
(Oahu)**Dive Sites:** YO-257 shipwreck, Canyons Reef, *Mahi* shipwreck, Makaha Caverns.**Boats:** *Explorer*, 62', 28 passengers, hot water shower, two heads, spacious and dry cabin, camera storage, video lab.**Diving Services:** Two-tank morning dives \$74; one-tank afternoon dive \$60; snorkeling \$39; night diving Saturday nights \$60; computer diving; unsupervised buddy diving.**Certification Services:** PADI open-water, advanced open-water, rescue, divemaster, instructor, specialties, SSI open-water referrals.**Hotel/Diving Packages:** Outrigger Hotel w/ ocean views, kitchenettes, restaurants, pools. 4 day/3 night pkg. includes 3 nights hotel, 4 days Dollar-rent-a-car, 2 days diving - \$364/d.o. Two day dive pkg. \$138 (two wreck dives/two reef dives).

"For a very unique diving experience, Atlantis Reef Divers is a must! Atlantis' trained professional staff will ensure your diving vacation is a fulfilling one!"



CIRCLE NO. 94 ON READER SERVICE CARD

LAHAINA DIVERS INC.**800-998-DIVE (3483)**

(Maui)

Dive Sites: West Maui, Molokini, Lanai.**Boats:** *Endeavor*, 50', 24 passengers and *Reliant*, 43', 16 passengers—ladders, swimsteps, showers, camera bins, USCG certified, breakfast, drinks, snacks.**Diving Services:** Two-tank morning dives \$95; Two-tank afternoon dives \$70; 3-tank dives including the backside of Molokini \$115.00; snorkeling half price; shore diving available; night diving M/W/F \$55; computer diving; unsupervised buddy diving; handicapped diver access.**Certification Services:** PADI certifications—Discover Scuba through Instructor and many specialty courses. NAUI, PADI, SSI and IDEA open-water checkout dives.**Hotel/Diving Packages:** Through Maui Islander—10 acre tropical site, pool, tennis; 6 days/5 nights, 7 boat dives, room, car, \$599/d.o.

"Lahaina Divers is unique in its commitment to friendly, professional service and exceptionally high-quality boats, store and equipment."



CIRCLE NO. 103 ON READER SERVICE CARD

FATHOM FIVE DIVERS**808-742-6991** ext. ROD
(Kauai)**Dive Sites:** Sheraton Caverns, General Store, Zach's Pocket, Brennecke's Ledge, Fast Lanes and 20 more sites off the south shore.**Boats:** Two boats, both 26' holding six people**Diving Services:** Two-tank morning dives \$75; two-tank afternoon dives \$75; snorkeling \$60; shore diving available; night diving on request \$65; computer diving; unsupervised buddy diving; handicapped diver access.**Certification Services:** PADI 5-Star IDC Facility, NAUI and SSI checkout dives.**Multiple Dive Packages:** 1st trip full price, 2nd trip 5% off, 3rd trip 10% off, 4th trip 15% off, 5th trip 20% off.

"We run small, personalized charters with an emphasis on marine life and great service. We can take you to more than 24 dive sites all within a ten-minute trip from the harbor."



CIRCLE NO. 98 ON READER SERVICE CARD

KONA COAST DIVERS**800-KOA-DIVE** ext. ROD

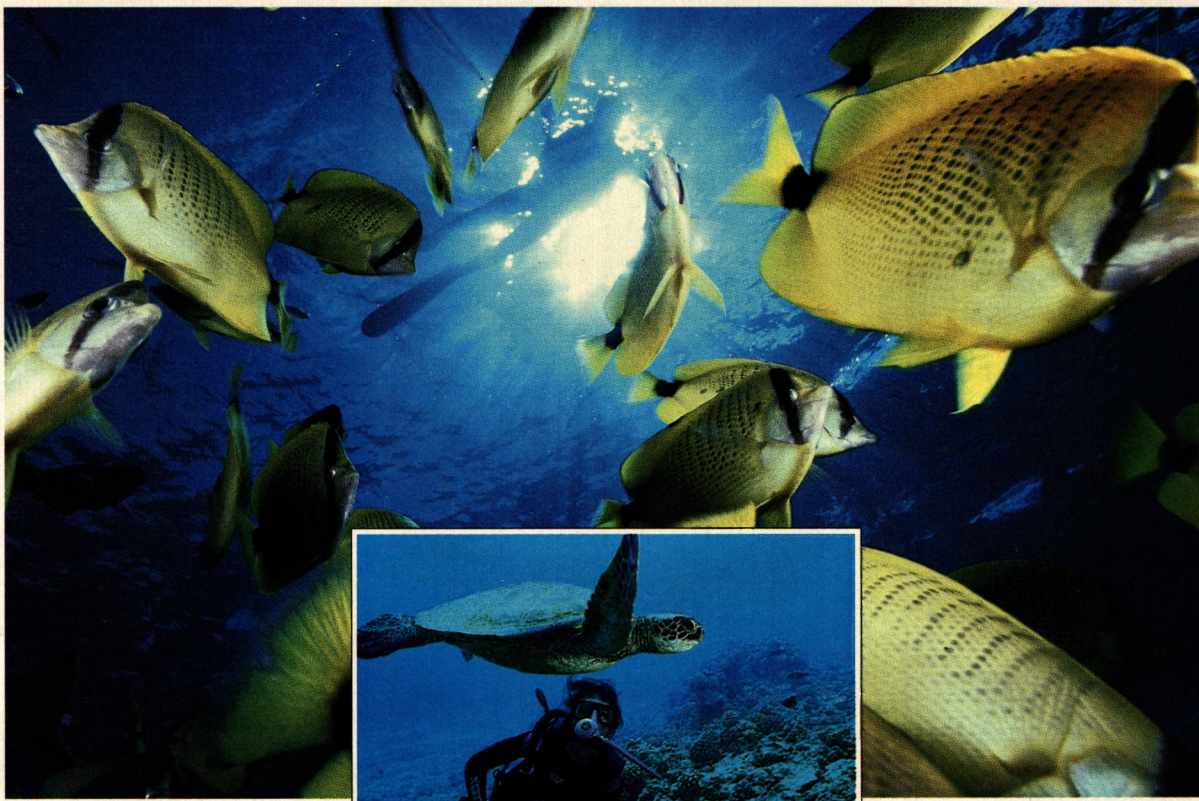
(Hawaii)

Dive Sites: 48 dives sites at the following locations: Makalawena, Otec, Pine Trees, Kaiwi, Red Hill.**Boats:** *Diver Two*, 42', 20 passengers, head, shower, camera bucket; *C-K9*, 32', 10 passengers, shower, camera bucket — both have custom boarding platforms and ladders.**Diving Services:** Two-tank morning dives \$69.50; snorkeling \$30; shore diving available; night diving Tue/Sun \$54.50; computer diving; unsupervised buddy diving; handicapped diver access; underwater guide services. Free unlimited refills and weights for shore diving. With multiple dive packages with discounts: 2 days 5% off, 3 days 7.5% off, 4 days 10% off, 5 days 12% off.**Certification Services:** PADI, NAUI, SSI certifications and referrals, specialty courses, private one-to-one training upon request.**Hotel/Diving Packages:** Through Islander Inn, Kona Alii and Kona Billfisher Apartments; Pkgs. starting at \$229 3 nights/4 boat dives/d.o./unlimited shore diving; \$534 7 nights/8 boat dives/d.o./ unlimited shore diving/free refills.

"Kona Coast Divers spares no expense in providing divers with the quintessential full service dive center."



CIRCLE NO. 102 ON READER SERVICE CARD



Photos: Dave Fleetham & Bob Abraham

Dive Team Hawaii gives you a new perspective on "sun and surf."

DIVE TEAM HAWAII

Call us for a free brochure, describing
our programs on each island.

- Maui - Lahaina Divers 1-800-998-DIVE
- Big Island - Kona Coast Divers 1-800-562-3483
- Oahu - Atlantis Reef Divers 1-800-554-6267
- Kauai - Fathom Five Divers 1-800-972-3078

There's a place unique in the world.

Where the water is crystal clear and pre-heated for your comfort.

*Where the air is fragrant with pikake and ginger, and soft as a plumeria
petal to the touch. Where rainbows are more radiant and plentiful than
smiles, but nearly as colorful as the fish of our islands.*

*And the best way to discover all the intrigue and mystery of
Hawaii's waters is in a seascape vacation. Guides like Dive Team
Hawaii explore sunken shipwrecks, intricate undersea lava tubes,*

*and schools of vibrant sealife, seen nowhere else. To learn more about the beauty of our islands, above and below
the water, call 1-800-GO-HAWAII and ask for a free Hawaii Travel Planner. It describes all there is to see and do,
and where to stay, on all six islands.*

The Hawaiian Islands
— The Most Beautiful Islands In The World. —



OFFERING YOU A UNIQUE DIVING ADVENTURE

and full range of dive opportunities

- Manta Ray night dives
- Recreational technical diving
- Boat and shore dives
- Shark cage open ocean dives
- Uncrowded charter trips
- Hi-Tech Diving Center
- Certification classes



Call today at
808-329-2243
ext. ROD

HAWAIIAN DIVERS

808-329-2243 ext. ROD
(Hawaii)

Dive Sites: Thunder Reef, Kaiwi Pt, South Point, Plane Wreck, Keahole Pt., Manta Ray Bay.

Boats: *Predator*, 56', 6 passenger, full air station, diving bell, shark cage; *Diversions*, 45', 20 passengers, first class; *Thunderball*, 26', 6 passenger, fast and personal.

Diving Services: Two-tank morning dives \$75; two-tank afternoon dives \$75; snorkeling \$50; shore diving avail.; night diving on request; computer diving; unsupervised buddy diving; handicapped diver access; manta night dives; shark cage dive charters; technical deep dives/wreck dives.

Certification Services: SSI Instructor Training Facility, PADI facility, IAND Nitrox/Technical, University of the Oceans.

Hotel/Diving Packages: Through King Kamehameha Hotel and Seaside Hotel.



"We offer diving services to those divers who want a diving experience that is unique, with higher quality and a lot of fun. We cater to small groups."

CIRCLE NO. 99 ON READER SERVICE CARD



*Due & Adventure
Outfitters*

GET HOT STAY HOT KONA HAWAII

Ultimate Kona Diving
Specials

Only \$400 ppdo
6 nights hotel
6 days rental car
3 two-tank charters with
lunch, tanks, weights

800-949-DIVE
ext. ROD

ECOSCAPES

800-949-DIVE ext. ROD
(Hawaii)

Dive Sites: Lona Lava Tube, Manta Ray Village, Turtle Pinnacle, Carousel, Bandit Ledge.

Boats: *Voyager*, 43', 30 passenger cap., takes 18, 6-person guided tours, includes lunch, tanks, weights, gear wash/dry/set-up. *Kanaloa*, 22', 4-6 person blue water trips.

Diving Services: Two-tank a.m. dives \$80; one-tank afternoon dive \$60; snorkeling \$30 includes lunch; shore diving avail.; night diving Tu/Th/Sat \$60; computer diving; unsupervised buddy diving; handicapped diver access w/ advance notice.

Certification Services: PADI 5-Star Instructor Development Ctr; Open-Water, Adv. Open-Water, Rescue, Divemaster, 14 specialty courses including photography, videography, blue water, INSTRUCTOR.

Hotel/Dive Packages: Kona Seaside downtown and King Kamehameha's at Kona Beach. 6 night room/6 days car/3 day 2-tank, 2-location charter including tanks, weights, lunch, guide from \$400 pp/d.o.



"We pamper our customers by caring for your gear, customizing dive sites for each charter and offering long bottom times."

CIRCLE NO. 96 ON READER SERVICE CARD



Jack's Diving Locker
Established 1981



BG Johnson

- Boat & Shore Dives
Lava tubes • Arches • Exotic marine life includes all gear, professional, experienced, & fun guides
- Manta Ray Night Dives
- PADI Dive Center ★★★★★
- NAUI Dream Resort
- Videos • Sales • Photos • Rentals



KAILUA-KONA, HAWAII

75-589 Alii Drive
Coconut Grove Marketplace
Kailua-Kona, Hawaii 96740
800-345-4807 ext. ROD
808-329-7585

JACK'S DIVING

LOCKER

800-345-4807 ext. ROD
(Hawaii)

Dive Sites: Manta Night Dive, Coral reefs, tropical fishes, lava tubes, canyons, arches, dramatic drop offs.

Boats: *Lightnin Radon*, 34', 30 pass. capacity take only 12 divers, roomy, fast, lots of shade; 25' Mako, fast six-pack. Fresh water shower/head.

Diving Services: Two-tank morning dive starts at \$69; one-tank afternoon dive \$55 includes gear; snorkeling \$30; shore diving avail.; night diving M/W/F starts at \$79; computers ok; video and underwater photography available; handicapped diver access.

Certification Services: PADI 5-Star Dive Center and NAUI Dream Resort offering all levels through Divemaster; SSI checkout dives.

Hotel/Diving Packages: Royal Kona Resort w/ocean views, pools, beach. Starting at \$615 for two people including room and car for 3 days and 6 dives ea.



"Our friendly people make the difference. We offer fun, non-rushed dives in small groups."

CIRCLE NO. 100 ON READER SERVICE CARD

Diving Hawaii's Kohala Coast!



Join us on our new boat for that personalized dive on our unspoiled, uncrowded reefs!

A Professional Full-Service Dive Center serving all your diving needs on the beautiful "Big Island" of Hawaii!



Reservations recommended:

1(808)882-7774

VISA/MC welcome ext. ROD

KOHALA DIVERS LTD.

808-882-7774 ext. ROD
(Hawaii)

Dive Sites: Laua Dome Rock, Ulua Cave, Kei-Kei Caves, Crystal Cove, Frog Rock, Pioneer Reef.

Boats: 25' Mako, 6 passengers, big swim step ladder.

Diving Services: Two-tank morning dive \$75; Two-tank afternoon dive \$75; snorkeling \$15 on space available basis; night diving on request \$75; computer diving; handicapped diver access.

Certification Services: PADI 5-Star Diving Center. PADI certification services available plus specialty courses including Underwater Navigation, Deep Diving, Underwater Photography and Search and Rescue.

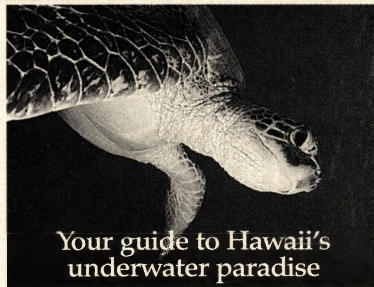


"Come dive the uncrowded, unspoiled reefs on the Kohala Coast."

CIRCLE NO. 101 ON READER SERVICE CARD

Aquatic Adventures

Your Full Service P.A.D.I. Dive Center



Your guide to Hawaii's underwater paradise

- Sea turtles, dolphins, whales and a colorful array of fish
- PADI certification and specialty classes
- Discover Scuba Diving Program for beginners

AQUATIC ADVENTURES

Your Full Service PADI Dive Center

800-204-4613

ext. ROD

4-1380 Kuhio Hwy, Kapaa, Kauai, Hawaii 96746

AQUATIC ADVENTURES

800-204-4613 ext. ROD
(Kauai)

Dive Sites: Sheraton Caverns, Brennecke's Ledge, Turtle Hill, General Store, Mana Crack, Niihau.

Boats: 26', six-pack.

Diving Services: Two-tank morning dives \$69 or \$85; two-tank afternoon dives \$69 or \$85; snorkeling \$50; shore diving available; night diving on request \$60 or \$80; computer diving; handicapped diver access.

Certification Services: PADI courses from Open-Water to Assistant Instructor. All specialty courses except Dry Suit, Altitude, Cavern, Wreck and Ice.

Diving Packages: Book three sets of dives and get \$20 off third dive; book 5 sets of dives and get a free dive.



"Our goal is to give each customer the best service possible. No detail is too small for us to take care of. We aim to please."

CIRCLE NO. 93 ON READER SERVICE CARD



DOUBLE YOUR BOTTOM TIME!

"We are Kauai's First & Only"

NITROX TROPICAL DIVERS

- Enriched Air Training Facility-IANTD & ANDI
- 24 HOUR Fast Fills & Delivery 24 HOURS

Pure Air • Oxygen • Nitrox • Custom Mix

In a Single Day Discover The Smart Way To:

- Double your BT • Reduce Fatigue • Increase Safety

PADI International Resort Association Member

- Referrals • Certifications • Introductory Dives • Pool • Tanks to 140 of • OSHA Approved • Safe • Easy • FUN!

1-800-NX5-DIVE

808-822-7333 • Pager 808-241-BEEP

NITROX TROPICAL DIVERS

800-NX5-DIVE

(Kauai)

Dive Sites: Entire island and other islands on request.

Diving Services: One and two-tank morning dives, \$78/\$98; one and two-tank afternoon dives, \$78/\$98; snorkeling \$48; shore diving avail.; night diving on request, \$78/\$98; computer diving and nitrox computer diving; unsupervised buddy diving; handicapped diver access.

Certification Services: PADI, DAN, IANTD, ANDI, ARC.

Hotel/Diving Packages: Through the Pono Kai Resort and Kauai Coconut Beach Resort with ocean views, restaurants and pools. Special diving package: enriched air nitrox diver certification course, t-shirt, all gear, 2-tank boat dive: \$298.



"We offer 24-HOUR air fills, delivery and tank rentals."

CIRCLE NO. 104 ON READER SERVICE CARD

DIVE & SEA CENTER

MAUI'S BEST DIVE EXPERIENCE

- Two, six passenger dive boats
- Dive Molokini's backwall along with more than 20 dive sites on Maui's South Shore
- Best rental rates \$19.95 Full Scuba
- Best dive package 2 days of diving and one night dive \$220.00

808-874-1952
ext. ROD

1975 S. Kihei Road, Kihei, HI 96753

DIVE & SEA CENTER

808-874-1952 ext. ROD
(Maui)

Dive Sites: Molokini - Backwall/Inside; South Maui - Five Caves, Red Hill, La Perouse Bay; Pinnacle Point, Golden Arches, Lanai.

Boats: *Gale Force*, 27', 6 passengers; *Sundance*, 25', six passengers.

Diving Services: Two-tank morning dives \$85; snorkeling \$65; shore diving avail.; night diving Tu/Wed/Th \$70; computer diving.

Certification Services: PADI Open-Water, Advanced, Rescue, Divemaster, and specialties.

Dive Packages: 3 day, 6 dive locations, tanks and weights included: \$225; 2 day, 1 night dive, 5 dive locations, tanks and weights included: \$220.



"Dive & Sea Center offers diving at a relaxed pace. Each charter is customized to fit the needs of our divers."

CIRCLE NO. 95 ON READER SERVICE CARD

5-Star Diving



"Every diver's buddy"

Specializing in fun for the whole family! Including the latest in scuba, snorkeling, & watersports equipment!

.....
We'll arrange condo/car/diving!

.....
Locations in Lahaina & Kihei!



*Personalized instruction;
all levels.*

*Air, sales, rentals,
repairs, charters.*

800-876-5334
808-874-5332 ext. ROD

PACIFIC DIVE

800-876-5334 ext. ROD
(Maui)

Dive Sites: Lanai Cathedrals, West Maui/Black Rock, Molokini Crater, South Maui coastline.

Boats: To Molokini, 25', 6 passengers, partial shade, solar shower, cabin area; To Lanai, 36', 6 passengers, head, solar shower, cabin area.

Diving Services: Two-tank morning dives Molokini \$89/Lanai \$110 (gear included); one and two-tank afternoon dives avail. to Lanai, South and West Maui coastline (gear included); space avail. snorkeling \$59; shore diving avail.; night diving on request \$75; scooter dives \$89; computer diving; unsupervised buddy diving.

Certification Services: All levels of PADI certifications plus specialty courses.

Hotel/Diving Packages: Studio and 1 or 2 person condos with ocean views and swimming pools.

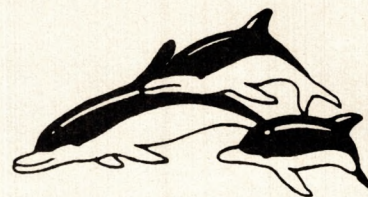


*"Personal attention is our reputation,
Aloha spirit is our goal. Two locations
to serve you."*

CIRCLE NO. 105 ON READER SERVICE CARD

PRIVATE SCUBA SERVICE ON MAUI!

MAXIMUM 4 DIVERS



BOAT DIVE PACKAGES

Ask about...3 tanks \$99

- 2 tank Molokini & Lanai pkgs.
- 6 pack boats
- Private charters

BEACH DIVE PACKAGE

- 3 tanks \$89

PADI INSTRUCTION

Patient, understanding instruction for beginning divers. Private and semi-private. No crowds. All levels.

REEF WATCHERS

Full service dive center

808-874-3467
ext. ROD

61 S. Kihei Road, Suite A • Kihei, Maui, HI 96753

REEF WATCHERS

808-874-3467 ext. ROD
(Maui)

Dive Sites: 5 Graves, Black Rock, Lanai, Molokini, Ulua Beach, 28 boat sights.

Boats: 24' six-packs to Molokini and Lanai, 38' visits 28 dive sights on all islands, 38' diving/snorkeling six-pack.

Diving Services: One/two-tank morning dives, \$49/\$69; One/two-tank afternoon dives, \$49/\$69; snorkeling avail.; shore diving avail.; night diving on request \$79, computer diving; unsupervised buddy diving; handicapped diver access.

Certification Services: All levels of PADI Instruction.

Diving Packages: 3 tanks, beach diving, full set up with guide, \$89; 3 tanks, boat diving, full set up with guide \$99.



*"We are an inexpensive private scuba service.
We go when you want to go. Patient, under-
standing instructors, small classes."*

CIRCLE NO. 107 ON READER SERVICE CARD

THE ULTIMATE DIVE

Maui, Hawaii

- ★ Our Success is a direct result of customer satisfaction.
- ★ First time customers soon realize that we take their "best interest" to heart.
- ★ Returning divers soon realize the vast extent of our local knowledge, as day after day we visit different and unique locations.
- ★ All of our customers know we go out of our way to afford an experience worth much more than the cost of the charter.
- ★ Let's Go Diving!

with

Ed Robinson's **DIVING ADVENTURES**

FREE INFORMATION PACKAGE

1-800-635-1273

ED ROBINSON'S DIVING ADVENTURES

800-635-1273 ext. ROD
(Maui)

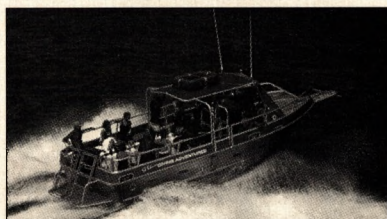
Dive Sites: Molokini Crater, Lanai Island, Wailea Coast, Makena Coast, La Perouse Bay, South Point.

Boats: *SeaDiver II*, 36', 13 divers/3 crew, marine head, freshwater showers, large dive platform, 2 side dive doors, canvas sun cover; *Outrage*, 22', 6 divers/2 crew, small, intimate, personalized.

Diving Services: 2-tank morning dives \$85, snorkeling \$75 (w/diver); 2-tank sunset/night dive Thurs \$100; computer diving; unsupervised buddy diving; handicapped diver access.

Certification Services: PADI certification courses, adv. courses, checkout dives, introductory dives, free warm water buoyancy course Sun/Tues on boat.

Hotel/Diving Packages: Condo pkg: 8 days/7 nights, 12 boat dives, car, pp/d.o., \$740. 10% off for 3 or more days of diving booked direct.



"Our success is a direct result of customer satisfaction. Join us for the best dives of your life!"

CIRCLE NO. 97 ON READER SERVICE CARD

South Pacific SCUBA

"Not the biggest, just the best."



ONE WEEK DIVE PACKAGE!

- 7 nights hotel and rental car
- 5 Dive days on 2 islands*
- *4 nights/3 days diving Oahu
- 3 nights/2 days diving Maui or Hawaii



HAWAIIAN PACIFIC RESORTS

NEW
ARRIVAL!

32' Cougar Cat!
Twin hull • 16 passenger
"Fastest dive boat on the island!"
Stable, USCG certified
800-95-SCUBA
ext. ROD

740 Kapahulu Ave., Honolulu

SOUTH PACIFIC SCUBA

808-735-7196 ext. ROD
(Oahu)

Dive Sites: *Mahi* shipwreck, *YO-257* shipwreck, Spinning Caves, Makaha Caverns, Pinnacles, The Land of Oz.

Boat: *Power Cat*, 32', max. 16 divers, head, shower.

Diving Services: Two-tank morning dive \$65; two-tank afternoon dive \$65; snorkeling \$25; night diving \$70; computer diving; handicapped diver access.

Certification Services: PADI 5-Star Instructor Development Center.

Hotel/Diving Packages: Available through Hawaiian Pacific Resorts-hotels on three islands, ocean views, pool: 7 nights, 5 dive days on two islands with rental car \$799. Also, 3-day diving pkg. \$160.

South Pacific SCUBA





"Not the biggest, just the best!"

CIRCLE NO. 108 ON READER SERVICE CARD

OAHU's BEST



Daily 2-Tank Dives off the Leeward Coast, away from crowded Waikiki.

-  **Glass Bottom**
-  **Professional Crew**
-  **Ten Diver Maximum**
-  **Quality PADI Instruction**

Free "Aloha Packet" on Request

Rainbow Diver II

LEE RODGERS, Captain
800-982-6747
ext. ROD

RAINBOW DIVERS, INC.

800-982-6747 ext. ROD
(Oahu)

Dive Sites: the *Mahi* wreck, Makaha Caverns, Land of Oz, Chapel Reef, Twin Caves, Tunnels.

Boat: *Rainbow Diver II*, 28', max. 14 passengers, glass bottom, freshwater solar shower, camera rental, U/W video, soft drinks, fruit, U/W guide, oxygen and first aid on board, PADI Instructor on board, hotel pickup.

Diving Services: Two-tank morning dive \$85; two-tank afternoon dive \$85; snorkeling \$25; night diving on request \$85; computer diving; unsupervised buddy diving; handicapped diver access (HSA certifications available).

Certification Services: PADI certification services Discover Scuba Diving and Open-Water through Advanced plus all PADI specialties except Ice, Altitude, and Dry Suit.



"Owned and operated by man and wife team, in business since 1983. Our glass bottom boat gives divers the unique ability to preview dive sites plus we have easy bow entries and exits."

CIRCLE NO. 106 ON READER SERVICE CARD

AGGRESSOR FLEET KONA AGGRESSOR II

800-348-2628 ext. ROD



Live-aboard departs from: Kailua Pier, Kailua-Kona HI

Boat size/cabins/amenities: 80' catamaran built in 1992, maximum 10 divers, five cabins, 2 to 1 staff to guest ratio, head/shower/vanity/double or single berth in each stateroom, individual climate controls in each room.

Dive Sites: From Pt. Upolu in North Kohala to Kalae Point at the southern point of the Big Island; Lava tubes, walls, enormous schools of Pacific fish and manta rays, blue water dive encounters with porpoises, dolphins and whales. Dive sites include: Eel City, the Okoe Bay, Red Hill, AuAu Crater, Manuka Bay, Manta Ray Village, Milolii Drop-Off, Pohue Bay, Tubastrea Tunnel, Kauna Black Coral Forest, Ladders at South Point.

Clearly The Best.

Don't just take our word for it. Readers of *Rodale's Scuba Diving* recently named *Kona Aggressor II* the Pacific's #1 Favorite Live-Aboard— with some of the best live-aboard food! Proud? You bet! Their kudos continued underwater. Our incredible Kona dive sites were awarded:

#2 favorite night dive, U.S.

#5 favorite beginner's dive destination, U.S.



Listen to the experts.
The best is crystal clear.
Call the Aggressor Fleet.

1-800-348-2628

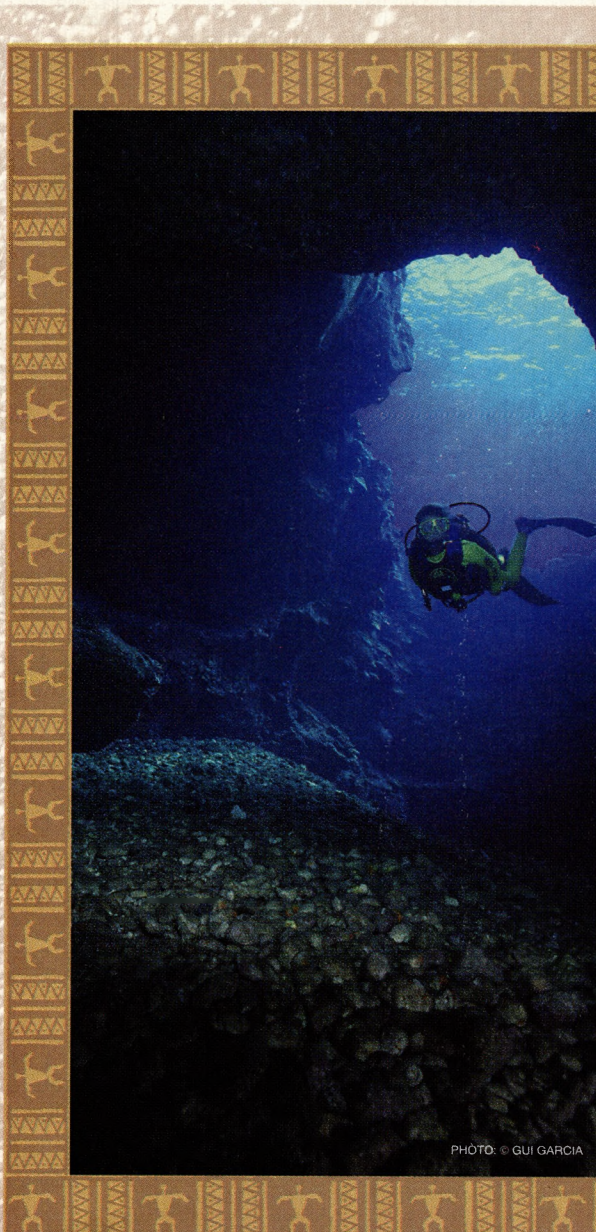


PHOTO: © GUI GARCIA



Boat Amenities: Hot tub, E6 lab and photo center, completely equipped dive deck, adventure cage, spacious salon, open bar, restaurant quality food and service, entertainment center.

Rates: 7 day charter \$1695, 5 day trip \$1595, 4 day charter \$1295. Departs every Saturday all year long.

Aggressor Fleet boats are luxurious live-aboards designed and constructed specifically for divers and underwater photographers. The vessels cruise at speeds that make it possible for you to dive the most remote as well as the very finest dives sites. The *Aggressors* venture to the outer limits allowing the most bottom time for your money. Each boat accommodates a maximum of 14 to 20 guests with all the amenities and modern conveniences that have become Aggressor trademarks.

Other Aggressor Fleet boats:

Bay Islands Aggressor II
Belize Aggressor II
Cayman Aggressor III
Galapagos Aggressor
Kona Aggressor II
Okeanos Aggressor
Palau Aggressor
Truk Aggressor
Turks & Caicos Aggressor

"The Kona Aggressor II travels the exotic Kona Coast in luxury, taking you to incredible sights such as Manta Ray Village. Also experience deep water drift dives with our adventure cage."

ALOHA DIVE SHOP

808-395-5922 ext. ROD
(Oahu)

Dive Sites: Sites between Koko Head and Diamond Head (southeast side of Oahu).

Boats: 40', maximum 30 passenger; private boat charters by request.

Diving services: Two-tank morning dive \$75; afternoon dives by request; snorkeling; night diving on request \$85; computer diving; handicapped diver access; free transportation to and from all Waikiki Hotels.

Certification Services: PADI 5-star Training Facility; PADI and SSI referrals.

"Owner/operator for 25 years, Jackie James is affectionately referred to as the First Lady of Diving in the Hawaiian Islands."

ALOHA DIVE SHOP
HOME OF
Jackie James

First Lady of Diving in the Hawaiian Islands
Koko Marina, Honolulu, Hawaii 96825
(808) 395-5922 • (808) 395-8882

Jackie James affectionately referred to as the *First Lady of Diving in the Hawaiian Islands* is now entering her 25th year as owner/operator of ALOHA DIVE SHOP

Jackie's PADI 5 Star Training Facility specializes in Shallow Boat Dives made daily from her Koko Marina waterfront location.

The *First Lady's* guests are provided with FREE transportation to and from all Waikiki Hotels.



"Female Instructor Extraordinaire with career spanning 25 years"

CIRCLE NO. 92 ON READER SERVICE CARD

AARON'S DIVE SHOPS

808-262-2333 ext. ROD
(Oahu)

Dive Sites: North Shore's Shark's Cove, Mahi Shipwreck Waianae, Mailaha Caverns, Y50-50 Wreck.

Boats: Reef Explorer, 60', maximum 24 passengers; South Seas II, 38', maximum 20 passengers; Rainbow Diver, maximum 10 passengers.

Diving Services: Two-tank morning dives, one-tank afternoon dive, shore diving available, night diving on request, computer diving, three Oahu locations - Kalua, Pearl City, Camp Smith/Scuba Locker.

Certification Services: PADI 5-Star Development Center, all levels through IDC offered.

"We are Hawaii's largest PADI training facility providing training and dive services for over 23 years. Please call us for a great dive."



Jack Aaron with Cousteau divers

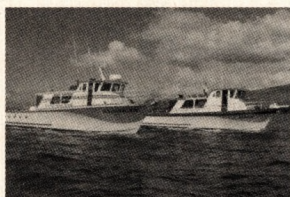
Dive With The Best—They Do!

Come dive with the store the Cousteau team dives with! Aaron's is Hawaii's premier 5 Star PADI Instructor Development Center with over 23 years experience. Whether you want a boat charter, beach dive, specialty training or private instruction; the Aaron's team is ready to make your dive a hit. Call or visit one of our three Oahu locations for the best in service, equipment and training.

KAILUA (808)262-2333 ext. ROD
PEARL CITY (808)487-5533 ext. ROD
CAMP SMITH/SCUBA LOCKER (808)477-0514 ext. ROD

CIRCLE NO. 91 ON READER SERVICE CARD

HAWAII 4 DIVERS



- Daily two-tank boat dives
- World famous cathedral caverns
- Molokini Crater
- Night dives
- PADI Certification classes
- Two large dive boats 50' and 43' featuring spacious decks, interior cabins, wide swim platforms and freshwater showers.
- Air station and rentals



**HAWAIIAN REEF
DIVERS—MAUI
CENTRAL PACIFIC
DIVERS**

800-551-6767

ext. ROD

808-667-7647

156 Lahainaluna Rd., Lahaina, Maui, HI 96761



DIVE KAUAI SCUBA CENTER
Kauai's Most Progressive Scuba Center

- 28' Custom built dive boat including showers, stereo, swim step w/ dual ladders
- Daily chartered 2-tanks morning and afternoon—1-tank night dives
- PADI 5-Star instructor development center
- All levels of PADI certification including specialty classes
- Forbidden Isle dives
- Underwater video and photo service



800-828-DIVE

ext. ROD

808-822-0452

976 Kuhio Hwy., Kapaa, Kauai, HI 96746



OCEAN CONCEPTS
A PADI 5-Star Instructor Development Center

- Dive the calm clear Leeward coast of Oahu.
- PADI open water advanced and specialty classes
- Three charters daily 2-tank morning and afternoon dives and 1-tank night dive. Multi-day packages available.
- Daily snorkeling trips.
- Underwater camera and video service.



800-808-DIVE

ext. ROD

808-677-7975

94-547 Ukee St., Waipahu, HI 96797



SEA PARADISE

If you do not enjoy your dive with us, we'll refund your money

- Specializing in small dive groups - no more than 6 divers per guide
- Morning 2-tank dive, afternoon single tank and sunset/night 2-tank dive
- A Manta Ray night dive - one of the most spectacular dives on the island
- PADI Certification Center

Sea Paradise
scuba inc.

800-332-KONA

ext. ROD

808-322-2500

P.O. Box 580, Kailua-Kona, HI 96745

"LIKE NO OTHER PLACE"

CIRCLE NO. 111 ON READER SERVICE CARD

CIRCLE NO. 109 ON READER SERVICE CARD

CIRCLE NO. 112 ON READER SERVICE CARD

CIRCLE NO. 113 ON READER SERVICE CARD

HAWAIIAN REEF DIVERS

800-551-6767 ext. ROD
(Maui)

Dive Sites: Lanai Cathedral Caverns, Molokini Crater, Maui West Coastline.

Boats: *Alaskan*, 50', 24 passengers and *Zephyrus*, 45', 18 passengers - both have shaded area, large swim step, freshwater shower, marine head, large deck area. Small dive boats also available.

Diving Services: Two-tank morning dives \$89; one-tank afternoon dive; snorkeling \$49; shore diving available; night diving Wed/Sat; computer diving; unsupervised buddy diving; handicapped diver access.

Certification Services: PADI, NAUI

Hotel/Diving Packages: Through Plantation Inn - pool, Gerard's Restaurant, centrally located in Lahaina town, car and moped rental on premises. Also, 2 days diving/2 islands/4 dives \$159 includes lunch, breakfast and all equipment.

"We have been a family-owned business on Maui for 24 years running two boats daily."

DIVE KAUAI SCUBA CENTER

800-828-3483 ext. ROD
(Kauai)

Dive Sites: General Store/Turtle Bluffs, Sheraton Caverns, Brennecke's Ledge, Tunnels Reef, Mona Crack.

Boats: 28' *Delta*, custom built, max. 12 divers, marine head, shower, stereo, swim step and ladders.

Diving Services: Two-tank mornings dives \$75-90; two-tank afternoon dives \$75-90; snorkeling \$45; shore diving available; night diving on request \$55-70; computer diving; handicapped diver access.

Certification Services: PADI 5-Star IDC Facility, Open-water through Instructor plus 11 specialties.

Hotel/Diving Packages: Through Kauai Coconut Beach Hotel - ocean views, pool, restaurants, 7 day pkg. includes 7 two-tank daily dives plus room and car, \$980-1066.

"Dive Kauai is the only operation with a custom dive boat offering daily dives, special charters to Niihau and private tours."

OCEAN CONCEPTS

800-808-DIVE ext. ROD
(Oahu)

Dive Sites: Leeward coast of Oahu, World War II minesweeper *Mahi*, Makaha Caverns.

Boats: *Lightning* 36', 36', 22 divers, covered midships, warm water shower, custom-designed for diving, marine head, ample storage, roomy sun deck, convenient step ladder; *Bayliner*, 22', 6 divers.

Diving Services: Two-tank morning dives; two-tank afternoon dives; snorkeling available; shore diving available; night diving Wed/Sat; computer diving allowed; camera rentals; souvenir videos of your dive available.

Certification Services: PADI-Open-water through Instructor. Plus Discover Local Diving - an environmental orientation to Oahu's west coast.

"We're your charter or dive tour service, seven days a week, 24 hours a day."

SEA PARADISE

800-322-KONA ext. ROD
(Hawaii)

Dive Sites: Red Hill area, Kealakekua Bay, Manta Ray night dive.

Boats: *Sea Paradise*, 31', 12 divers, lots of sun and shade; *Nautilus*, 30' 6 divers.

Diving Services: Two-tank morning dives \$70; one-tank afternoon dive \$50; snorkeling \$25; shore diving available; night diving on request \$55; computer diving allowed.

Certification Services: PADI, Open-water to Assistant Instructor plus specialty courses.

Hotel/Diving Packages: Through Kona Surf - 2 pools, 2 restaurants, ocean views, mountain/golf course views, tennis. Also, packages through Kanaloa condos - very spacious, on the ocean or golf course, restaurants, pools, tennis.

"Satisfaction Guaranteed. If we don't do everything we can to make your dive enjoyable, we'll return your money."

PORFOLIO

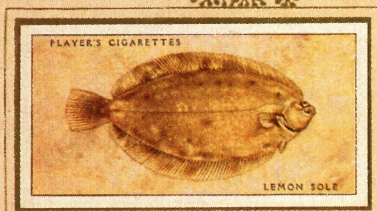
Card Sharks

Long before Joe Camel brandished a pool cue and slipped on a black leather jacket, the somewhat more modest Norway haddock played salesman for a British line of cigarettes. The haddock and 49 other sea fishes of Great Britain were featured on collectible cards included in every pack of Player's Medium Navy Cut Cigarettes in the 1930s. For a penny, the fastidious smoker/collector could send off for "An Album of Sea Fishes" to organize and display the collection.

Each card measures 2 $\frac{3}{4}$ - by 1 $\frac{1}{2}$ -inches and carries a fish portrait on the front and descriptive information on the back ("The Sunfish is a sluggish, stupid creature, and may be easily harpooned"). Today, the cards are collectors' items, fetching more than \$50 apiece in good condition.

"There are about one hundred and sixty different (Continued on page 70)

PLAICE (*Pleuronectes platessa*). This is perhaps the best known of our flatfishes, and is certainly the most important commercially, no less than 681,475 cwt. of Plaice being landed by British vessels in an average year. Unlike the Flounder, it does not enter fresh water, the adults living in fairly deep water, the young frequenting shallow bays and inlets. The Plaice feeds on the bottom, and the chisel-like teeth in the jaws and strong blunt teeth in the throat are well adapted to deal with the shellfish upon which it mainly lives. The maximum size varies in different localities, but the average length is about fifteen inches. A Plow of seven pounds has been caught on rod and line at Hastings. (No. 46)



LEMON SOLE (*Microstomus xiphioides*). In spite of its name, this Flatfish is quite unrelated to the Dover Sole and is a cousin of the Plaice and Flounder. It is a northern fish, ranging from Iceland and the White Sea to the Bay of Biscay, and frequents water of medium depth. The name Lemon Sole refers to its color, and its other name of Smeared Dab is due to the fact that when freshly caught it is usually thickly covered with slime. It feeds on shellfish, crustaceans and worms, spending most of its time on the sea bottom. The flesh is well-flavoured, and is said to taste better during the winter months. The Lemon Sole rarely exceeds a length of fifteen inches. (No. 47)

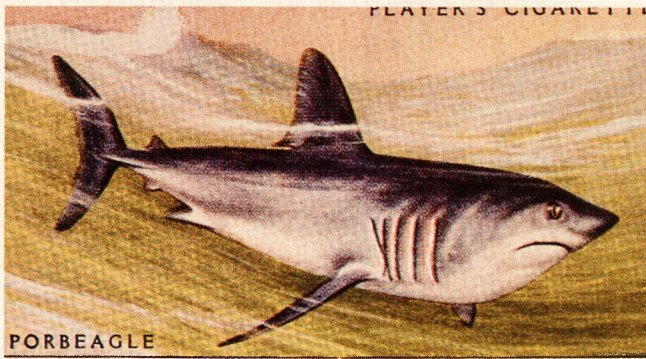
COMMON SOLE (*Solea solea*). To the epicure, the Sole is the best flavoured of all our sea fishes. This characteristic is due to the formation of a chemical substance in the flesh during the early stages of decomposition, and is developed two or three days after death. In addition to the Common (or Dover) Sole, three other kinds are found in British and Irish waters—the Sand (or French) Sole, the Thickback (or Variegated) Sole, and the Solemate. All Soles lie buried during the day, feeding at night upon sand-eels, worms, shellfish, etc. The small sensitive filaments on the under side of the head assist in the search for food. The average length is about fifteen inches, but one of twenty-six inches is recorded. (No. 48)



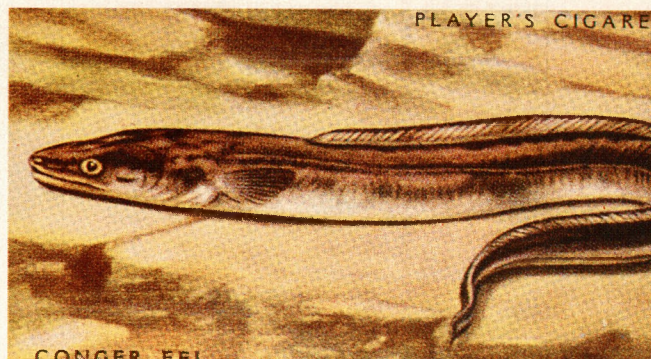
SUN-FISH (*Mola mola*). Common in the Atlantic, this grotesque fish strays to our coasts in the summer, and may often be observed basking at the surface. Its body is curiously shaped, and the fish has the appearance of having had its tail amputated. The mouth is small, and it is provided with a single sharp-edged plate in each jaw. Its food consists mainly of small fishes and crustaceans, and the fact that deep-water fishes have been found in its stomach suggests that at times it must descend to considerable depths. The Sunfish is a sluggish, stupid creature, and may be easily harpooned. It grows to a length of six feet or more and may weigh a ton. The fish is not normally edible. (No. 49)

ANGLER (*Lopinus piscatorius*). Sometimes known as the Fishing Frog, this grotesque fish derives its name from the presence of a slender flexible line on its snout, ending in a skinny appendage like a little flag. This is waved about in the water to lure small fishes within reach of the cavernous jaws, which are armed with rows of sharp teeth. These teeth lie flat with their points directed inwards when the victim is being swallowed, but stand erect and bar its escape if it tries to move in the opposite direction. The Angler does not always lie on the bottom but sometimes solves birds floating at the surface. It grows to a length of five feet, and the tail part provides good eating. (No. 50)

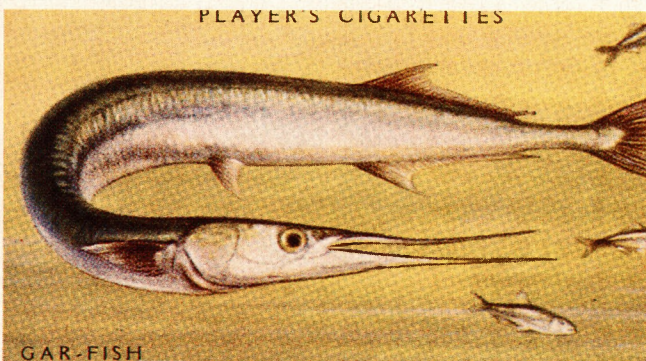




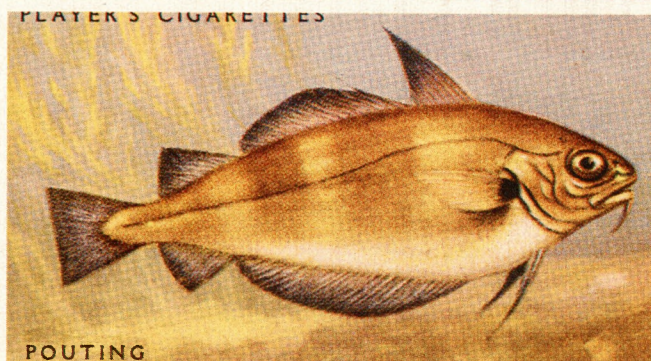
PORBEAGLE



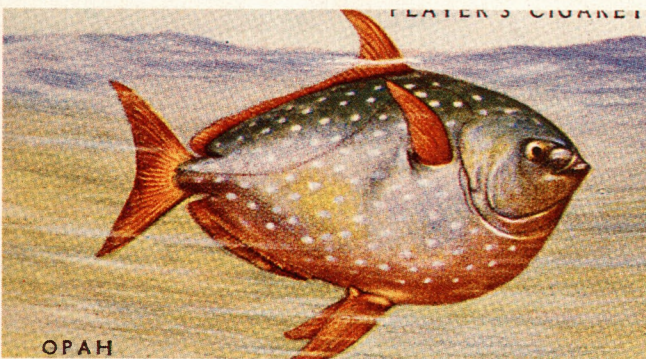
CONGER EEL



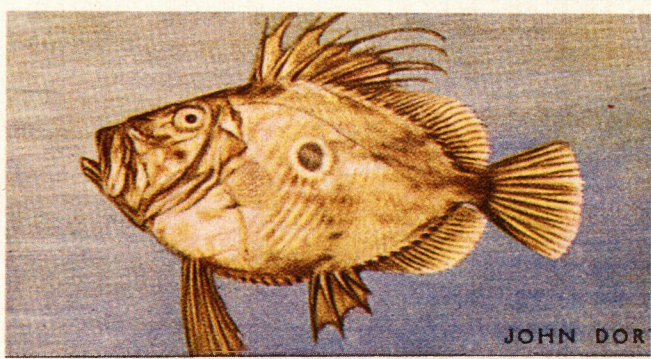
GAR-FISH



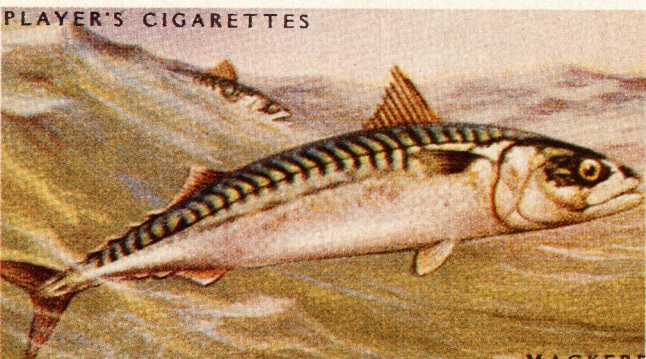
POUTING



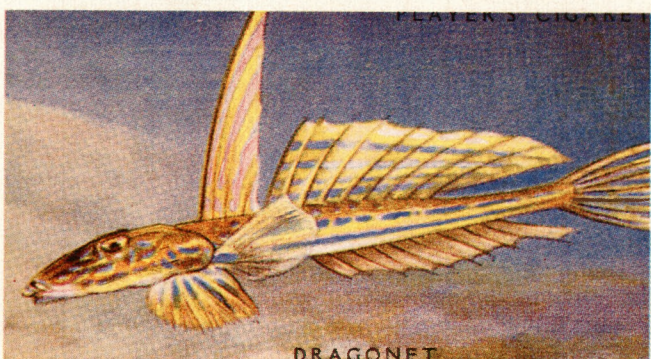
OPAH



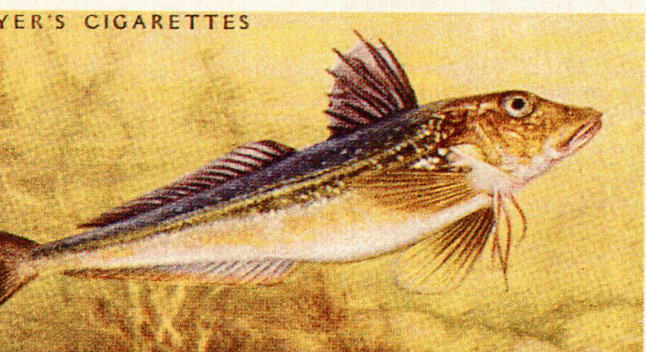
JOHN DORY



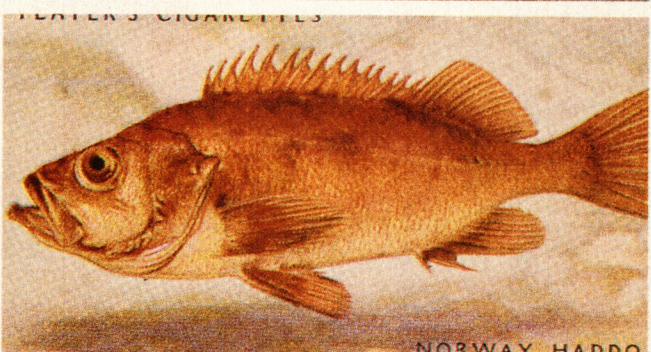
MACKEREL



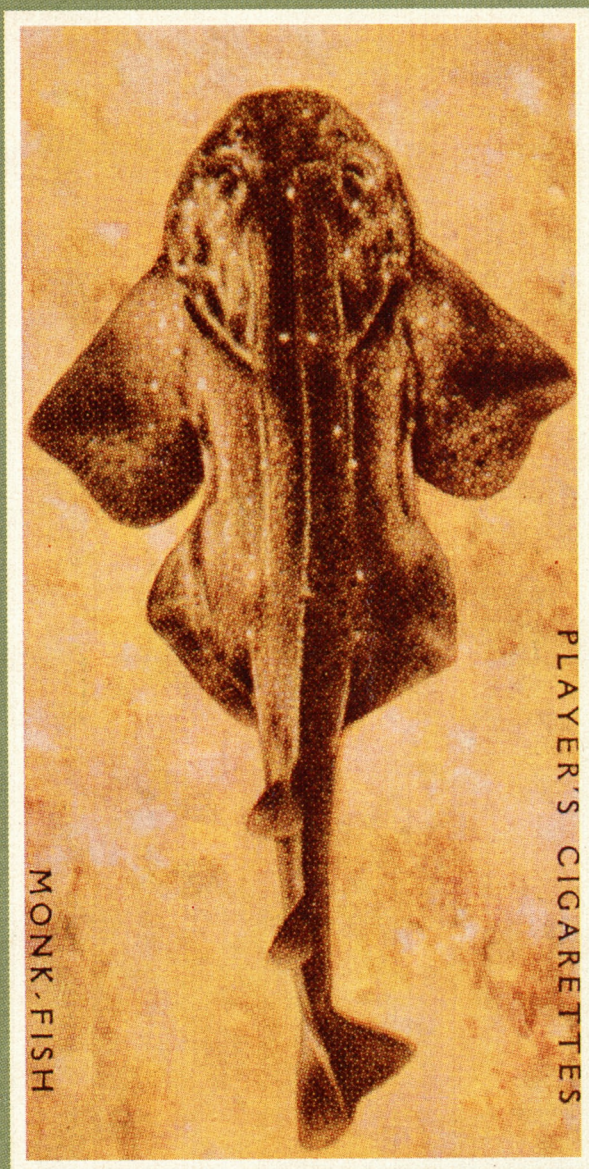
DRAGONET



GREEN GURNARD



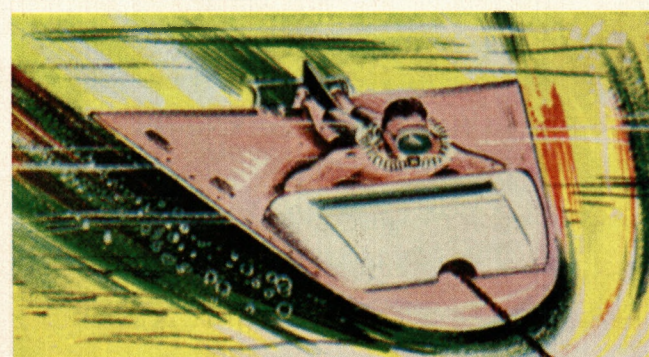
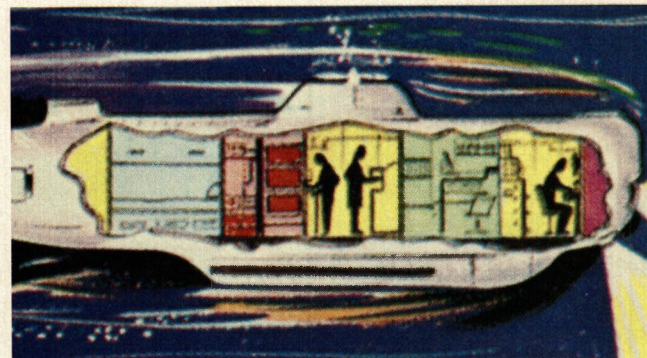
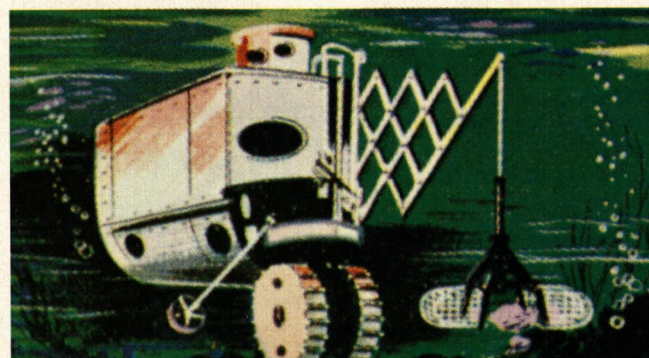
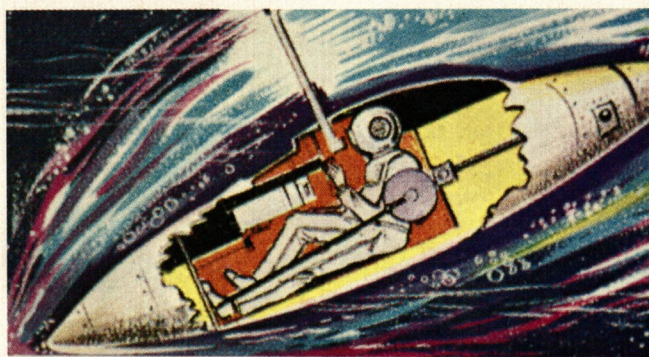
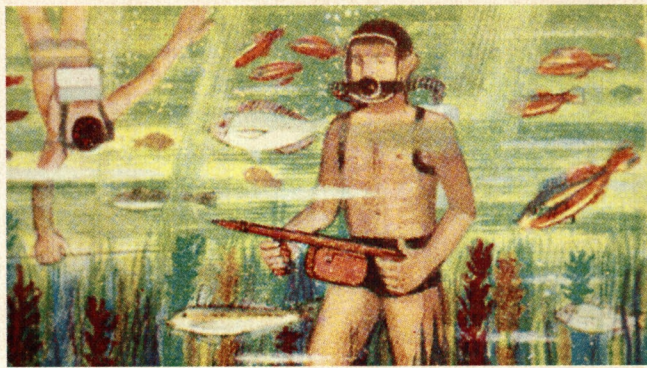
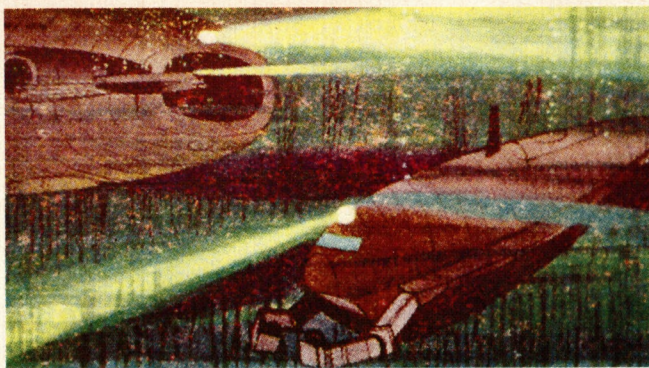
NORWAY HADDOCK



ABOVE: ACCORDING TO THE CARD, "MONK FISH. THE NAMES 'MONGREL SKATE' AND 'SHARK-RAY' SOMETIMES APPLIED TO THIS FISH REFER TO ITS APPEARANCE, WHICH IS INTERMEDIATE BETWEEN THAT OF THE SHARKS AND THE RAYS." LEFT: THE CARD'S CAPTION READS, "JOHN DORY. THE GERMAN NAME OF 'PETERFISCH' REFERS TO THE BLACK SPOT ON ITS SIDE, BELIEVED TO REPRESENT THE THUMB-MARK MADE BY ST. PETER WHEN HE TOOK THE TRIBUTE MONEY FROM THE FISH'S MOUTH."



THIS CARD EXPLAINS,
"STANDARD DIVING SUIT.
AIR IS PUMPED FROM THE
SURFACE BY HOSES INTO
THE HELMET AND THE DIVER
REGULATES THE PRESSURE
ACCORDING TO HIS DEPTH.
AS THE SUIT IS PARTIALLY
FILLED WITH AIR THE DIVER
BECOMES VERY BUOYANT
AND HAS TO WEAR 80 LBS.
OF LEAD WEIGHTS ON
HIS CHEST AND LEAD
WEIGHTED BOOTS WEIGH-
ING 17 LBS. EACH."



kinds of fish that may be described as fairly common on the coasts of Great Britain and Ireland,” reads the introduction to the album. “But only 33 of these find their way with any regularity to the fish-monger’s shop. Probably less than a dozen of these edible fish will be familiar to the average housewife.”

Whether the intention was to educate the housewives of Great Britain about the richness of marine life in the North Sea or to sell cigarettes, the Imperial Tobacco Co. succeeded on at least one count—creating 50 tiny works of art with the anatomical detail of Audubon and the understated palette of Rembrandt. Consider this description: “With few exceptions, our sea fishes are rather soberly coloured, and in the matter of brilliant hues they cannot challenge comparison with their relatives from tropical waters.”

Sober hues had no place in the Anglo American Chewing Gum

Company’s “Underwater Adventure” series of cards, distributed in packs of gum. The year was 1966, and as space shots fueled the collective imagination with visions of travel among the stars, the proliferation of scuba gear offered adventure in the seas.

Double-hose regulators, two-man subs and one-man “underwater gliders” promised access to the wonders of the underwater world never before possible. And the possibilities were endless. The back of one card reads: “Surrounded by the



**PIONEER PORTRAITS: SCUBA
 PRIMOGENITOR JACQUES-YVES
 COUSTEAU (LEFT) AND
 BATHYSCAPHE DESIGNER
 AUGUSTE PICCARD (RIGHT).**

colourful gardens of the shallow sea-bed, and with air for two hours’ breathing strapped to their backs, the explorers move among the fish. At any moment they might find a wrecked Spanish treasure ship—or a hungry shark.”

While stumbling onto a Spanish treasure galleon seems less likely on a shallow recreational dive today, these postcards from the past might help rekindle a little of the wonder we all experienced on our first open-water dive.



AUSTRALIA

Diving Down Under



PHOTO COURTESY OF MIKE BALL

When you tell people that you've gone to the "bommies" and they in turn suggest that you mind the "wobbegongs," you know that you're in Australia. Australians have a colorful way of describing the sea creatures and topography that inhabit the Great Barrier Reef, the world's biggest fishbowl. Once you get the hang of the language, you learn that a bommie is a giant coral head that rises from the ocean floor like a pinnacle and a wobbegong is a squat, lethargic shark that resembles a sunken log with lots of branches.

These oddities are among the marvels of diving Down Under, where the sheer size of this watery playground stretches the imagination. The Great Barrier Reef parallels the Queensland coast for 1,250 miles, and consists of more than 2,500 reefs that range from a few hundred yards to several miles in length. More than 2,800 types of fish live in Australian waters, and there's always the chance of finding something completely new. Beyond the reef is the Coral Sea, where vibrant atolls with incredible visibility and fascinating marine life beckon to divers willing to spend time aboard a luxury dive vessel. Most of these atolls are 80 to 300 miles beyond the Reef.

Divers have quite a choice for exploring Australia's magnificent waters. From Cairns, a well-developed resort city that is the best known gateway to the Reef, you can arrange your diving on day boats, selecting motor cruisers or oversized, luxurious catamarans. Another option is booking two days to two weeks on a dedicated live-aboard, with vessels ranging from 60 to 100 feet long. In addition to Cairns, dive excursions depart from the cities of Townsville, Port Douglas, Prosperine and Gladstone. Finally, for divers who prefer a land-based vacation, a handful of islands offer small resorts on or near the Reef including Lizard, Dunk, Hayman, Green, Whitsunday and Heron Islands.

So many incredible sites abound in Australian waters that it would take years to explore them all. But high on any diver's wish list would have to be the wreck of the *Yongala*, a vintage 350-foot steamship that sank in 1911 during a typhoon. Located 50 miles offshore from Townsville, the wreck is encrusted with soft and hard corals, and the waters here teem with myriads of cod, large yellowtail jacks, snappers, sweetlip and monstrous, 500-pound groupers.

Another awesome experience is diving the Ribbon Reefs, a chain of coral reefs that extend for 60 miles north of Cairns to Lizard Island. Reachable on four-day boat trips, the Ribbons is famous for one site in particular—Cod Hole. Here, the fish have become accustomed to divers, and they freely approach to beg for handouts. Among the friendly residents are potato cod, greasy cod, flowery cod and large green moray eels.

For the diving purist who is looking for pristine waters with exceptional visibility (often exceeding 200 feet!), the best advice is to head for the Coral Sea. Among the nearby sites is Flinders Reef, where divers are rewarded with gigantic soft coral, lush pinnacles covered with scalloped coral and thousands of crinoids, large barracuda, dogtooth tuna and the peculiar unicorn fish.

On a multi-day live-aboard trip in the northern Coral Sea, divers will experience many impressive sites, two of which are Osprey Reef and Bougainville Reef. At Osprey Reef you can find numerous pelagics including manta rays and barracuda, as well as sharks such as whitetips and silvertips. The second area is known for its sheer dropoffs with tree-size growths of wispy soft corals and a large population of pelagics.

No matter which option you select for exploring Australia's aquatic realm, you'll find a high level of professionalism within the diving community. And you'll undoubtedly reach the conclusion that one trip is simply not enough.

LIZARD ISLAND LODGE

AUSTRALIAN RESORTS PTY LTD

Phone 800-227-4411 ext. ROD
or (617)360-2444

Location: North Queensland on the Great Barrier Reef - 1 hour's flight from Cairns International Airport.



Accommodations: 30 suites, two deluxe rooms; Rates valid to March 31, 1995 - AUD\$524 suite single occupancy, AUD\$437 suite twin/double, AUD\$600 deluxe single occupancy, AUD\$500 deluxe twin/double (rate includes all meals).

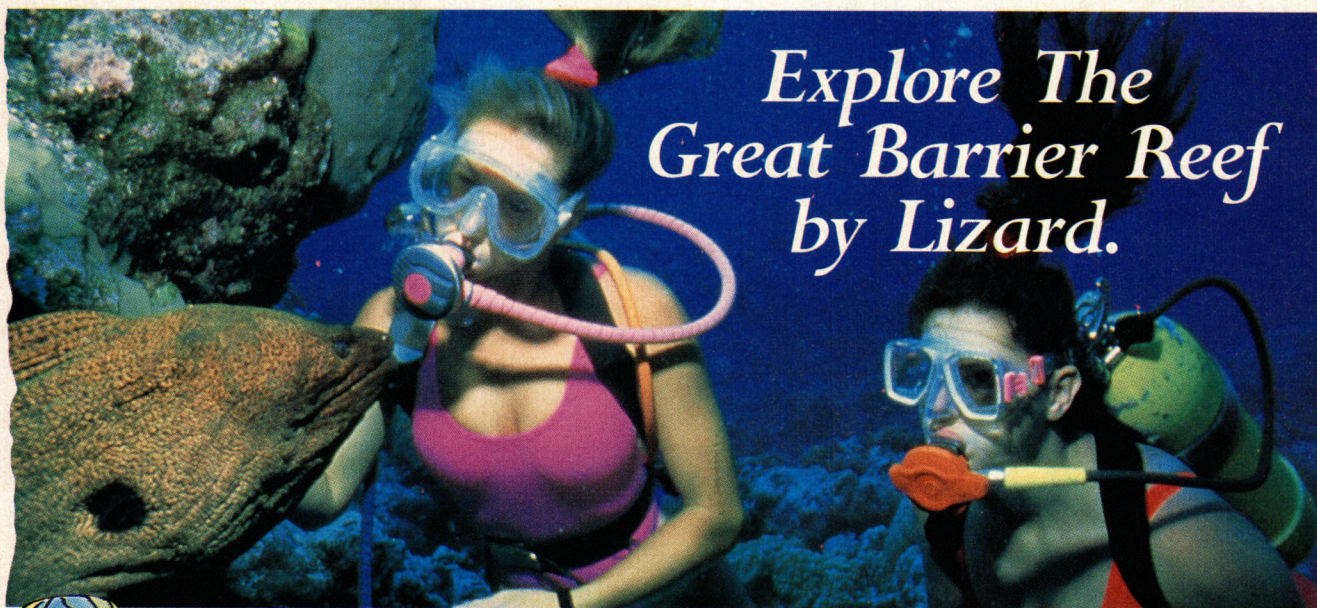
Amenities on premises: Ferrier's Restaurant, boutique, outdoor swimming pool, outdoor tennis court, in-house videos in lounge, game lounge.

Diving services on premises: Lizard Island Dive Shop located on the resort property; 46' dive boat with 20 passenger capacity includes toilets and freshwater shower; dive sites visited include Cod Hole/No. 10 Ribbon Reef, No Name Reef, Yong Reef, Banks Bank, North Direction Island and Cobia Hole; AUD\$40 for a local dive/AUD\$105

Inner Reef Dive Trip/AUD\$92 night dive/AUD\$130 for an Outer Reef Dive Trip; (Equipment rentals available. All gear included on local and night dives.)

Other watersports available on premises: Windsurfing, water skiing, snorkeling, sailing and fishing.

"Lizard Island is world renowned for its close proximity to the famous Cod Hole and other spectacular dive spots. The Island is surrounded by 24 white sand beaches and offers unobtrusive 5-star service and meals."



Explore The Great Barrier Reef by Lizard.



There's no better way to dive the beautiful Great Barrier Reef, than from Lizard Island. One hour's flight north from Cairns International Airport, lands you on an island of pristine beauty with 24 secluded beaches, and 1000 hectares of unspoilt National Parkland. Lizard Island is uncrowded, with its 32 private suites catering for no more than 64 guests. Our dive shop has a modern and well maintained range of equipment, and is staffed by experienced Naui and Padi instructors. Our 46' dive vessel "Volare" visits a range of inner and outer reef sites including drift, wall and night dives.



We journey to the world renowned Cod Hole every second day, where you will be entertained by our instructors hand feeding the Giant Potato Cod. The abundant marine life around Lizard Island allows you to dive some of the most spectacular reefs in a close proximity to the resort. For people wishing to dive, introductory or full certification courses are available. For information on dive packages from the U.S.A and Canada call 800 443 0799 or 415 442 0799.



MIKE BALL EXPEDITIONS SPOILSPORT, WATERSPORT, SUPERSPORT

Phone 800-952-4319 ext. ROD
or 61-77-723022



SPOILSPORT

Boat Size/cabins/amenities: 100'; max. 28 divers; 14 cabins; staff to guest ratio of one to three.

Dive Sites: Flinders Reef Complex-Coral Sea; Watanabe Pinnacle-big fish action; Scubazoo-shark dive; Gigantus Gorgonus-world's largest fan coral; Yongala Wreck.

Boat Amenities: Qualified French chef; camera rental; E6 processing; photo pro on board; 10 bathrooms; equipment rental; complimentary reef ecology program.

Rates: Coral Sea Expedition July-Dec. 1994, US\$1404-US\$2020 pp; Jan.-June 1995, US\$1286-US\$1857 pp (Departs Tues. from Townsville and returns Mon.).

AUSTRALIA'S BEST!

CORAL SEA

Explore the remote oceanic reefs in the Coral Sea, with Australia's best deep wall diving in 150 ft. visibility.

Witness exciting shark action at Scuba Zoo, plus the incredible Yongala Wreck that offers what might well be considered the greatest concentration of marine life on Earth!



Choose Australia's

- Best Diving
- Best Vessel
- Best Service
- Big Fish Action
- Big Shark Cage
- Big Itineraries

**Mike Ball
Dive Expeditions
AUSTRALIA**

800-952-4319

Fax 011 61 77 212152



WATERSPORT

Boat Size/cabins/amenities: 70'; max. 26 divers; 8 cabins.

Dive Sites: Yongala Wreck; Spectacular marine life including huge Queensland groper, giant mottled rays, sea snakes, turtles, sharks and huge schools of fish.

Boat Amenities: On-board library; educational and activities program; complimentary reef ecology program.

Rates: Yongala Wreck Expedition July-Dec. 1994, US\$300-US\$363 pp; Jan.-June 1995, US\$289-US\$351 pp. (Departs Tues. from Townsville, returns Thurs.; one Fri. departure each month, returns Sun.)

SUPERSPORT

Boat size/cabins/amenities: 90'; max. 26 divers; 15 cabins.

Dive Sites: World famous Cod Hole; entire chain of Ribbon Reefs including Steve's Bommie, Pixie Pinnacle and the Great Escape.

Boat Amenities: Equipment and camera rental; E6 processing; complimentary reef ecology program; spectacular low-level reef flight to Lizard Island.

Rates: Cod Hole Expedition July-Dec. 1994, US\$816-US\$572 pp; Jan.-June 1995, US\$542-US\$768 pp. (Departs Mon. and Fri. from Cairns, returns Thurs. and Mon.)

"Mike Ball Dive Expeditions' success has resulted from focusing on Australia's best dive sites and providing a standard of service suited even to the most fastidious traveller."

PACIFIC STAR

Discover AUSTRALIA's New Regions



6 Private Cabins with Bathrooms • 10 Passenger Maximum
Spacious - Stable - Comfortable

**DIVE THE CORAL SEA
OUTER GREAT BARRIER REEF
4, 6 & 7 NIGHT DEPARTURES**

For more information call:

TROPICAL ADVENTURES TRAVEL

800-247-3483 ext. ROD

111 Second North, Seattle WA 98109 • 206-441-3483 • Fax 206-441-5431

CIRCLE NO. 88 ON READER SERVICE CARD

PACIFIC STAR LIVE-ABOARD

Phone 61-79-466-383 ext. ROD



Boat size/cabins/amenities: 62 feet long; maximum of 10 passengers; six cabins with full ensuites

Dive Sites: Coral Sea - Lihou Reef, Diamond Islets, Coringa-Herald Cays, Marion Reef, Abington Reef, Flinders Reef; outer edges of the Great Barrier Reef off the Whitsunday coastline.

Boat Amenities: Air conditioning throughout; E6 slide processing; passenger carrying submersible dive platform.

Rates: 8 days/7 night Coral Sea Tour (average 28 dives), private cabins with own ensuite - US\$1560; 7 days/6 nights Outer Edges of the Great Barrier Reef Tour (average 24 dives) - US\$1000; 5 days/4 nights Outer Edge of the Great Barrier Reef Tour (average 16 dives) - US\$720.

"Discover the newly explored region of the Coral Sea and Great Barrier Reef off the Whitsunday coastline. Pacific Star is a new, custom-built dive vessel catering to only 10 passengers with four crew members."

an international dive symposium - oct '94

Safe Limits

cairns, australia

Name _____

Organisation _____

Postal Address _____

Country _____

Phone _____

Facsimile _____

\$AUD350 per delegate

All payments must be in Australian Dollars

Send to:

Total Control Conference Management

P O Box 101

Burleigh Heads, Q 4200

AUSTRALIA

☎ 61 75 766 388

Cheques payable to TCCM Trust Account

Relevant to Dive Tourism Operators Worldwide

TOPICS
presented by
international
authorities on:

dive safety

★

post treatment
altitude exposure

★

global data
collection

★

risks of multiple days
of multiple dives
and ascents

Limited places
allocated by date
payment received.

BOOK EARLY!

SAFE LIMITS DIVING SYMPOSIUM

October 21-23, 1994

Phone 61-75-766-388 ext. ROD

Symposium Topic: Health and safety issues for dive tourism operators worldwide.

Symposium Purpose: Create a forum for informed dialogue between hyperbaric medicine specialists and industry professionals by reviewing existing research, discussing the issues of multiple ascents and collating data worldwide.

The "Safe Limits" diving symposium offers a unique opportunity to explore the natural wonders of the Great Barrier Reef and take part in the formulation of a standard for international best practice for recreational and occupational diving.

Availability/fee: Places are strictly limited and will be allocated on the basis of receipt of registration and payment of AUD\$350 per delegate. For further information contact Total Control Conference Management at the number above.

NIMROD III DIVE ADVENTURES

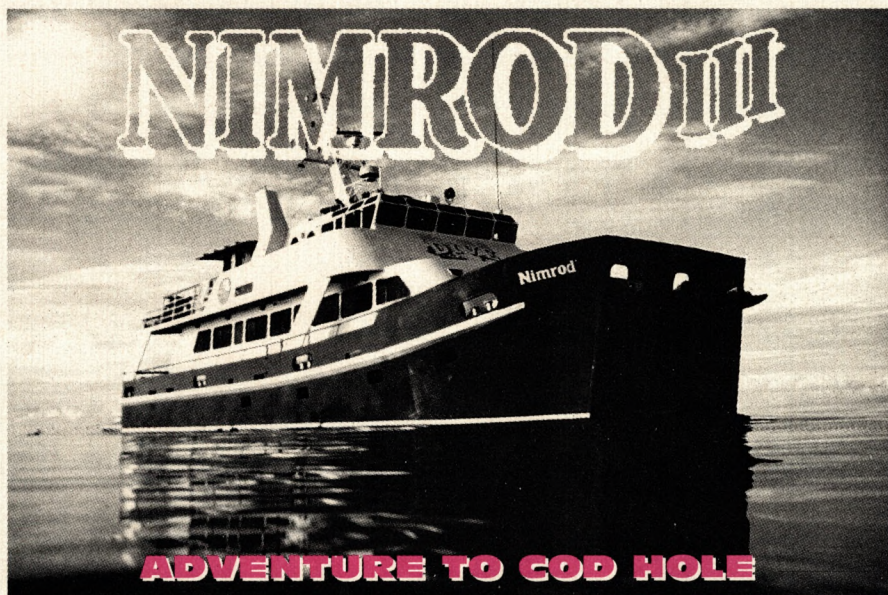
LIVE-ABOARD

Phone 070-315566 ext. ROD



Boat size/cabins/amenities: 70 feet long; maximum of 16 divers; 5 cabins each with ensuite bathroom and air conditioning - two staterooms and three four-share cabins.

Dive Sites: The Great Barrier Reef and Coral Sea — Cod Hole and Ribbon Reefs on the Outer Barrier Reef including dive sites such as Steves Bommie, Pixie Pinnacle, Shark Alley, Vertical Gardens, Challenger, Coral Gardens of Wonderland, Hard Shark Cafe, Fish Tank and Dynamite Pass.



FROM \$560*

4 DAYS & 3 NIGHTS • 11 DIVES
COD HOLE & RIBBON

Get a flying start to the Cod Hole from Cairns. Two scheduled departures weekly from

Lizard Island or Port Douglas. Then spend four days diving the Cod Hole, the Northern Ribbon Reefs, Pixie Pinnacles and Shark Alley for the greatest Barrier Reef experience!

* Quoted per passenger in a quadruple stateroom. Twin and double staterooms also available. All suites have bathrooms.

Inquire about our 7 & 10-day Coral Sea and Great Detached Reef trips.



Boat Amenities: Fully air-conditioned, TV and video tape player, compact disc and audio tape player, bar facilities, large diving platform, barbeque, auto washer and dryer, fishing equipment, sundeck. Twin hull makes boat stable and spacious.

Rates: 3 1/2 day trip - quad share AUD\$800 per person; master or twin stateroom AUD\$950 per person. Rates include basic dive equipment. (Nimrod III departs from Lizard Island. Included in price is low altitude flight over the Great Barrier Reef to Lizard Island and transfer back to Cairns after trip.)

Scheduling information: The Nimrod III takes Cod Hole trips every Tuesday and Saturday. Specials and Coral Sea 7-day trip, December 6-13, 1994 AUD\$1550 each. Detached Reef 7-day trip October 8-15, 1994 AUD\$1850 each. (The Nimrod III is also available for private charter to clubs, groups or individuals.)



"The Nimrod III is a stable and spacious catamaran, designed so you get the most out of your diving. You don't waste a day when diving with Nimrod III."

 **Sea Safaris**

800-821-6670

(U.S. & Canada)

310-546-2464 (CA)

310-545-1672 Fax


~~~~~

# The year of the **EARTHQUAKE,** the *fire*, the *mudslide*. And the Sidekick.

It wasn't an easy year to be in Los Angeles. But it was a good one to be inside a Suzuki 4-door Sidekick, as the rangers of the Santa Monica Mountains Conservancy found out. When firestorms swept the canyons, the rangers fought the blaze, darting over the smoldering slopes from one outbreak to another, in their 4-wheel-drive Sidekicks. Within hours of the earthquake, Ranger Kenn Hughes was driving otherwise impassable roads, clearing rubble, in his Sidekick. As rains turned the hillsides to muck, the Sidekicks stayed unfazed and unstuck. They're rugged and dependable, with the power to get over, around or through almost anything. Says Hughes, "I don't know where we'd be without them." In fact, he was impressed enough to buy one for his family. "After a year like this, we could use some time off. Off road, that is."

 **SUZUKI.**  
Ask anyone who owns one.  
1-800-447-4700



EPA-estimated 22 MPG city, 25 MPG highway with 5-speed manual transmission. Manufacturer's suggested retail price ranges from \$13,500 to \$17,200. Taxes, title, freight and license extra. Dealers set own price. This vehicle handles differently from ordinary passenger cars. Federal law cautions to avoid sharp turns and abrupt maneuvers. Always wear your seat belt. For specific details, please read your Owner's Manual. Don't drink and drive. Please Tread Lightly! on public and private land. © American Suzuki Motor Corporation 1994.

CIRCLE NO. 81 ON READER SERVICE CARD



# SANTA CRUZ, CALIF.

*Wanna be a spud stud? Beneath the wave-splattered cliffs of Southern California's largest island lies Potato Rock.*

BY JOHN FRANCIS

**B**ack-rolling out of the dinghy, I could see the broad top of Potato Rock pinnacle below me, covered in black mussels, barnacles and grass waving in the surge. As I started down the spire's vertical slope, a sheet of golden-striped grunts drifted over me then flashed away, letting the sun wave its fingers across the caves and overhangs of the wall's fractured sides.

You'd think that the cold currents usually screaming around this pyramid of rock would also wash it clean. You'd be wrong. Virtually every inch is covered with life, especially the anemones that feed on the heavy planktonic soup du jour served up by the surge. They cloak the rocky slopes like death stars exploding in a riot of colors: clumps of strawberry anemones, bushes of white rose anemones, mats of purple anemones. Juvenile fish flit among their tentacles, too quick to be caught.

You have to be fast to dive Potato Rock. Although closest to mainland harbors of all the Channel Island dive sites, Potato Rock is the least dived. You have to get your dive in before the big swells roll down the Santa Barbara Channel from Point Conception and slam directly into the high cliffs of Santa Cruz Island's east end. Beneath that spray, just



SUNFLOWER STARS BLOSSOM ON SANTA CRUZ'S ROCKY SHELVES AND BOTTOM (ABOVE); FRISKY AND FAST, THE CALIFORNIA SEA LION CAN SWOOP TO 450 FEET AND STAY SUBMERGED FOR 20 MINUTES (LEFT).





ALTHOUGH ITS TENTACLES HAVE THE LARGEST STINGING CELLS OF ANY KNOWN ANEMONE, THE TOXIN OF THIS CLUB-TIPPED ANEMONE ISN'T DANGEROUS TO HUMANS.

cut into the cliffs called Potato Harbor, awaits the pinnacle.

We had sailed out of Ventura on a northeasterly wind, headed for the wreck of the *Peacock*. But instead of dying as usual, the wind strengthened into a genuine Santa Ana, a howling gale from the desert that beat back the prevailing westerlies, flattened the swells and opened the door to Potato Rock. The *Peacock* could wait. In Channel Island diving you learn to take what nature gives, and today she was offering up one of her premier gems with a deceptively earthy name. We anchored in Potato Harbor, threw our gear in the dinghy and soon were headed down.

Past the gardens of anemones, purple gorgonians began to rise like a forest of bonsai trees fanning the current. The water which had seemed so clear near the surface now held patches of cumulonimbus clouds—collections of algae, plankton and vegetable debris mixed by the surge with the larvae and gametes of countless lobster, abalone and spawning fish. If the sea is a rich soup of life, we had just dived headfirst into a boiling pot, reduced this morning by the gods of diving to a gentle simmer.

Red and blue gobies gobbled mechanically at the floating masses of food. Neon-orange garibaldi and white-spotted opaleyes ate and ran. Rockfish, their pink and brown fins bristling, crouched in corners waiting for the slow-witted and careless, not sure which category to put divers in. Up close, these rocky slopes were like the big city's mean


streets: eat or be eaten. The moral imperative included us divers, who were after Potato Rock's legendary scallops that are supposedly "big as hubcaps." Pretty accurate, actually. Along a series of ledges, beneath the overhangs and wedged deep into cracks, the rock scallops had grown fat as prizewinning spuds, feasting on the marine consommé churned up by the current. But their greed betrayed them: As they exposed their mantles to feed, their bright-orange flesh stood out like traffic cones on the interstate. That night aboard the boat, they took their honored and delicious place in the human food chain.

The next morning held clear and calm in the harbor, but the Santa Ana winds had died and we could expect the big swells by noon. The door to Potato Rock was closing, but maybe we had time for one more dive: this time directly below the cliffs at the entrance to the harbor.

The cliffs' underwater slope was a jumble of rock fragments, cracked and tumbled against each other into a warren of crevasses and hidey holes. The tremendous wave action had even scoured caves into the basalt, some as large as pool halls. But safety dictated we stay away: The surge was growing and beneath the delicate mat of anemones the rocks were jagged as shrapnel.

By accident I found what I had hoped for: a small cave no bigger than the inside of a Dodge Neon, in a sheltered corner. Sure enough, hanging motionless at the top of the cave were four calico bass—a rare glimpse at a normally skittish game fish.

Back on the surface, an early

breeze out of the west kicked up a short chop that bounced our dinghy all the way back to the boat. Was there time for an afternoon dive? The skipper gazed a long moment to windward, shook his head and began pulling up the anchor. The door to Potato Rock had closed again, but our glimpse inside was enough to fill our game bags with dinners ready to be scalloped, baked and fried. 

*A veteran California diver, John Francis last reported on Baja's Punta Banda peninsula.*

## Dive In

Santa Cruz's Potato Rock is one of the finest sites for macro photography in the Channel Islands. A wide variety of plants, fish and invertebrates crowd together, especially on the northeast wall. Game hunters dive for fish, scallop and lobster in season. There's no kelp but a few abalone have been reported.

Because of its exposure to the prevailing winds and currents, Potato Rock is best dived on calm mornings during or immediately after a Santa Ana—east and northeast winds. Often, the Santa Ana easterlies meet the prevailing westerlies and produce a calm over the Channel Islands, flattening the swells and letting the vis blossom. Santa Ana conditions can occur any time of the year but are most common in fall and winter.

During a Santa Ana, visibility in excess of 60 feet is not uncommon at Potato Rock; under normal conditions it ranges from 10 feet down to zero. Expect water temps in the low 50Fs in winter and spring, rising to the mid- and high 60Fs in the summer and fall.

Many of the commercial dive boats operating out of Santa Barbara, Ventura and Channel Islands Harbor (Oxnard) visit Potato Rock on short trip days when the weather is right, since the conditions that open diving at Potato also usually close down regular sites. If you take your own boat, be aware that Santa Ana winds can be very dangerous, and Potato Harbor, though protected from Santa Anas, is otherwise a poor anchorage.

Potato Rock is marked on NOS Chart 18729, rising from the bottom at about 100 feet to within 15 feet of the surface. It is about 200 yards west-southwest from the entrance to Potato Harbor and is best located by depth sounder.

Dive boats which visit Potato Rock include the *Peace* (805-658-8286), *Spectre* (805-483-6612), *Truth*, *Conception* and *Vision* (805-962-1127), *Chieftain* (805-340-7185), *Island Diver* (800-766-SCUBA) and *Liberty* (805-642-6655).



# LAKE OUACHITA, ARK.

*Near the nation's smallest national park, you can find yourself in more hot water than Bill Clinton's investment portfolio.*

BY NICK LUCEY

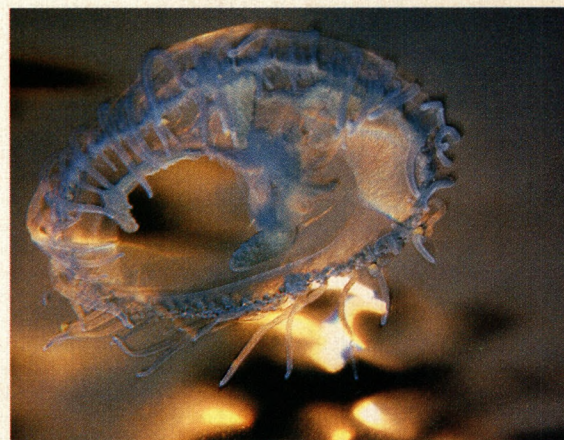
**T**ribes of Caddo and Quapaw were drawn to Arkansas' Ouachita region by legends of the "waters of life." Throngs of hopeful settlers were drawn to Hot Springs by rumors of the curative powers of its "miracle waters." I find myself here for much the same reason, and with optimism and a little nitrogen, I hope to find the spirits that haunt these coveted waters.

Bounding off the dive boat's bow, the warm surface of Lake Ouachita (WA-shi-taw) affords little respite from the mid-Southern swelter. Before descending the sheer rock wall at Checkerboard Island, I flash an OK to the owner of the Lake Ouachita Dive Center and my dive buddy, Steve Pilotte. The shore here is piled with cubic stones as if painted by Mondrian. But below, the picture turns to watercolor in visibility of 40 feet—plenty to soak in the brush strokes of lake moss, the bream's palette of scaly, iridescent hues, the translucency of button-sized freshwater jellyfish—and a spearfisherman drawing a bead on a 20-pound bass.

Checkerboard, which follows the wall to 140 feet, is one of 13 plotted dive sites in a lake that invites discovery of more. Dramatic walls, curious ledges and forests of moss tended by a who's who of game fish, jellyfish, freshwater shrimp and sponge make this an unlikely scuba microcosm. Diving is concentrated in the eastern half of the lake; Pilotte



KAREN MINOT



R. JOSEPH FINLEY (TOP RIGHT, TOP LEFT)



FRESHWATER JELLYFISH PRANCE ON LAKE OUACHITA'S SURFACE IN LATE SUMMER (TOP RIGHT); ARKANSAS' BIGGEST PUDDLE IS HUGGED BY THE FUZZY OUACHITA NATIONAL FOREST (RIGHT); BATHHOUSE ROW IS THE HISTORICAL GATEWAY TO HOT SPRINGS NATIONAL PARK (ABOVE); IT'S RUMORED THAT HERNANDO DE SOTO WAS THE FIRST EUROPEAN TO SEE THE SPRINGS IN 1541 (LEFT); BLUE CATFISH MAY NOT BE PRETTY, BUT MANY ARKANSANS HAVE ACQUIRED A TASTE FOR THEM (TOP LEFT).





says the western half suffers from run-off, concentrated boat traffic and shallower depths. But divers will find that they still have plenty of room to play.

Lake Ouachita is Arkansas' Big Daddy, revered with oceanic respect by Razorbacks. The 31 square miles of nautical nirvana was embraced by the furry green hillsides when the flow of the Ouachita River was halted by Blakely Mountain Dam in 1955. The lake's shoreline snakes more

than 1,000 miles and forms an outline reminiscent of a computerized fractal image. The 20-mile-long lake body branches out into multitudinous bays and coves, which branch out farther into near-infinity—a navigator's nightmare and a diver's dream.

Along the former riverbed lie reminders of the year the waters rose. At Cedar Glades, houses and buildings hastily abandoned still have a great view of the now submerged river, and lofty pines sway in an underwater breeze 100 feet below. Pilotte, who's located and explored the town, says it's too cold for many Arkansan divers' liking, but makes an excellent dry suit dive to a bygone era.

**Little Bird Island**, a small crescent of land and half-submerged trees, is a summer retreat for martins and an underwater hideaway for bass and bluegill. The lake's wreck scene includes a pair of small powerboats off Campers

Island, and the shimmering schools of shiny bream that bivouac here will make you do the two-step. North of Campers Island and at **Crystal Rock Chute**, remnants of the land's birth await discovery. Veins of quartz crystal flow through the lake's shale and limestone foundation. Turn over stones at 5 to 20 feet and you're bound to hit the mother lode.

Your profiles can also include beach diving from campsites on **The**

**Big Island** and **Crawdad Island**, walls and drop-offs at **The Wall**, **The Horseshoe**, **Whirlpool Rock** and **Slate Rock Bay**, and descending the northwest face of the **Blakely Mountain Dam**.

These dive sites and the lake are complemented by the Ouachita National Forest which rises from its surface at every angle. Despite protection that makes its coast development-proof except for marinas, the lake has become ground zero for water sportsmen and a mushrooming diving subculture. "I have seen recreational diving grow about 10 times since I first came here 15 years ago," recounts Pilotte. "It used to be all spearfishermen here, but now there's a lot of divers who come to just look around and enjoy the lake."

Landlocked Arkansans have an affinity for H<sub>2</sub>O—from ribbing tourists about paying \$2 for souvenir jugs to collect free Hot Springs water to spending \$300 million each

year on fishing equipment and trips.

And the game between man and fish (sometimes evenly sized) in the Natural State is won and lost on a diverse playing field. Arkansas slopes upward from the Mississippi Valley in the east where the turf is a dirty maize and olive patchwork of cotton fields and lazy pools, to the west where water fills troughs in folds of jade and cinnamon forest. The Ouachita Mountains are the highest range between the Appalachians and the Rockies, and the surface area of the state's inland waters is as big as Rhode Island.

Indeed, Lake Ouachita draws divers and spearfishermen from eastern Texas and Oklahoma, northern Louisiana and throughout Arkansas. It seems that spearfishing is merely an underwater extension of many Arkansans' love of the hunt.

And there may be something magical in this water after all—striped bass weigh in at 60 pounds, catfish tip the scales at 50 pounds and walleye can reach a hefty 20 pounds.

The nearest node of civilization is Hot Springs National Park, where people go to find watering holes—47 natural ones. Here, the connection between man and Earth is as strong as the vents that spout 143-degree mineral-rich water. Bathhouse Row, a series of European-style spas that feed off the springs, is testament to man's attempt to harness four millennia of stored energy.

At Josephine Tussaud's World of Wax across from Bathhouse Row, President Bill Clinton is frozen in paraffin like a health care bill in Congress. Hot Springs' homeboy moved here from Hope when he was in the second grade. Emotions are mixed about Clinton, but most locals agree that drinking the "miracle water" may have similar effects on your future success.

Back on Lake Ouachita, I have yet to disprove this theory. As I ascend to see the dusk sun melt into the lake, I realize why despite its abundance, water is so precious here. It's one of the few places left where the Earth opens herself up and allows us to silently appreciate her nourishment. ☺

*Assistant editor Nick Lucey keeps his \$2 jug of miracle water next to his desk.*

## Dive In

Lake Ouachita is 10 miles east of Hot Springs National Park on U.S. 270. Hot Springs is 50 miles southwest of Little Rock on I-30 to U.S. 70, and 110 miles northeast of Texarkana on I-30 to U.S. 270.

Accommodations and restaurants in Hot Springs range from thrifty to lofty. Development on Lake Ouachita is limited to resorts and marinas. Most provide accommodations, restaurants, bait and tackle, sundries and boat rentals and some even provide air fills. You can also rent fully equipped, air-conditioned houseboats—your own private live-aboard.

There are two full-service dive shops in the immediate area:

- **Lake Ouachita Dive Center:** Brady Mountain Resort on Lake Ouachita, (501) 760-1500, and 3023 Central Ave., Hot Springs, (501) 624-3393.

- **Scuba & Archery Center:** 1623 Albert Pike Road, Hot Springs, (501) 623-7062.

Visibility is decent year-round, generally ranging between 20 and 40 feet. Water temperatures drop to numbing low 40Fs in winter and soar to 90F (70F below the thermocline) in summer. The deepest point in the lake is more than 200 feet, and shores drop off steeply so watch your profiles.

When you're not face-to-face with big bad bass, take a ride into town and see how the other half lives. Hot Springs National Park, the nation's smallest, is centered on Bathhouse Row (501-623-1433) and projects out into the surrounding hillsides. The Buckstaff Bathhouse is the only one still operating and is open every day except Sundays and major holidays (501-623-2308). A burgeoning center for the arts, the city boasts several galleries downtown. Take the children to the Mid-America Museum (501-767-3461 or 800-632-0583) to interact with science, technology and nature, or put the kids to bed and head to Oaklawn (800-OAK-LAWN) for live thoroughbred racing or satellite links to tracks around the country.

For fishing and spearfishing regulations, call the Arkansas Game & Fish Commission at (501) 223-6300 or call (800) 364-GAME with your credit card ready to receive a license.

Call the Hot Springs Convention & Visitors Bureau at (800) SPA-CITY for more information.



# CAPE FEAR, N.C.

*There's nothing to be afraid of here unless you're worried about getting addicted to warm water and artifact-laden wrecks.*

BY KEITH PHILLIPS

**E**ighty feet down on the Civil War Wreck, I'm convinced that my dive buddy, Brad, is missing the show. He's poking around the wreckage while I'm taking in a shimmering chorus line of Atlantic spadefish. Behind them a school of baitfish desperately flees a flotilla of 4-foot greater amberjacks.

Meanwhile, Brad is looking for a glimpse of history in the form of lost Union war supplies. Camouflaged in the sandy bottom surrounding the wreck are the remnants of black leather cartridge cases, brass-trimmed Enfield rifles, belt buckles and brass sword hilts. The unidentified wreck was a wooden-hulled, twin paddlewheel steamer that sank in 80 feet of lonely water south of Cape Fear, N.C. Hardly recognizable as a ship, her paddlewheels and driveshafts are discernible among scattered piles of encrusted wreckage commanded by an aloof sea robin and a crew of obscenely ugly oyster toad fish. Her scattered cargo, too, has mastered the art of concealment almost as well as the toad fish. Some pieces hide beneath the sand while piles of artillery shells and rifles have fused into rock-like clumps. It's easy to pass them by and not realize what you've missed.

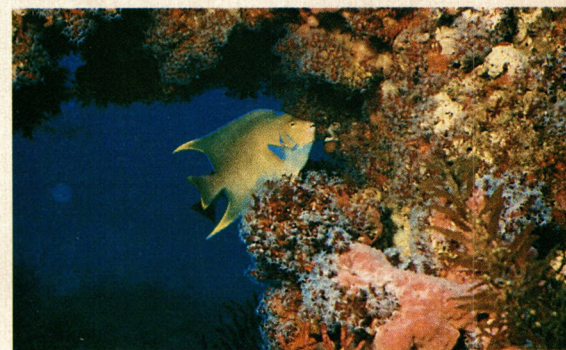
Cape Fear's diving is like that: tucked away just a little off the beaten path but full of surprises—if you know what to look for.

Although overshadowed by its northern cousins—Cape Lookout and the Outer Banks—Cape Fear has the same wealth of shipwrecks. Like Morehead City, it's also kissed by the warm, clear, tropical fish-packed Gulf Stream waters that eddy in during the summer months, turning the wrecks into bustling reef habitats.

While Cape Fear lacks the sexy, attention-grabbing submarine dives of its northern neighbors, the trade-off is a series of prominent off-shore rock ledges with enough tropical species to make you think Caribbean instead of Dixie. Sites like 23-Mile Rock, Sharktooth Ledge and



CLOCKWISE FROM TOP: SEA STARS, SPINY URCHINS AND ENCRUSTING SPONGES COMPETE FOR ATTENTION AND SPACE ON THE CAPE'S WRECKS AND ROCK LEDGES; INTACT, OPEN COMPARTMENTS ON THE HYDE BECKON DIVERS TO EXPLORE; CAROLINA OR CARIBBEAN—IT'S HARD FOR DIVERS OR BLUE ANGELFISH TO TELL ON 23-MILE ROCK; THE CAPE FEAR COAST FEATURES PLENTY OF TOPSIDE HISTORY TO COMPLEMENT ITS TREASURED SHIPWRECKS.



CLOCKWISE FROM TOP: JEFF COLLIER, JEFF COLLIER, BILL MANSFIELD, CAPE FEAR COAST CONVENTION & VISITORS BUREAU



Corals, sponges and sea fans radiate like neon signs, pulling in blue angels, grunts, triggerfish, Spanish hogfish, butterflyfish and wrasses as well as grouper, barracuda and—tucked beneath the ledges—spiny lobster. Dive operators do run charters to the ledges but less frequently than to the wrecks. You'll need to make arrangements for a ledge charter well in advance.

Not that you'll mind diving the numerous wrecks that have fallen victim to Frying Pan Shoals. From the mouth of the Cape Fear River, the Shoals extend into the Atlantic like a 28-mile trip wire. Shallow water and unpredictable Atlantic storms have long made the area a natural pinch point for shipping along the East Coast. The combination has been exploited by captains at the helms of both warring and smuggling vessels from Colonial days through World War II, when German submarines picked off East Coast shipping almost at will.

One of those victims was the 528-foot oil tanker *John D. Gill*, now one of the most popular Cape Fear dive sites. During her March 1942 maiden voyage, the *Gill* was torpedoed off Wilmington. The ship burned for two days before she broke into two sections and sank in 90 feet of water off Wrightsville Beach. The *Gill's* bow and stern sections are 50 to 75 yards apart and are usually dived separately. The stern section is badly broken but some machinery, ribs and at least one hold remain intact. The bow section is larger and a macro photographer's heaven. The flat, mostly intact deck is coated by colorful soft coral and sponges in shades of pink, orange and red. Among them are photogenic blennies, gobies, arrow crabs and other invertebrates. The top of the wreck lies in 60 feet, so the *Gill* provides an easy dive for all skill levels unless surface current or surge are present. Fish life includes barracuda, grouper, wrasses, filefish, triggerfish, African pompano, sea turtles, butterflyfish, spiny lobsters, shovelnose (locally called slipper) lobster and the occasional sand tiger shark.

The *Hyde* is a dredge sunk in 80 feet of water as an artificial reef in 1988. Intact and upright, her open decks and cavernous hold are encrust-

ed with soft corals, spiny urchins, wavy fields of ankle-deep sargassum algae and small patches of yellow encrusting sponge. The top decks start in about 60 feet, with open decks and compartments to swim through. Christmas tree plume worms, Florida fighting conch and spiny sea fans crowd the wreck, forming a neighbor-

## Dive In

Between May and October, Cape Fear's offshore diving can offer 75- to 100-foot visibility. The good stuff starts about 20 miles offshore so settle in for 1- to 3-hour boat rides to the better sites. During the dive season, water temperatures range in the high 70Fs to low 80Fs and seas average 2 to 3 feet with minimal current. Gloves, dive-skins or thin wetsuits are recommended in the summer for protection from scrapes and stings. The rest of the year you'll want them for warmth—if you can get out at all. Between November and April, temperatures drop to the upper 50Fs and lower 60Fs with average seas of 4 to 6 feet and occasional ones of 6 to 8 feet.

Although controversial, artifact collecting is a common activity on shipwrecks off Cape Fear. Under state law and the federal Abandoned Shipwreck Act, all wrecks inside the state's 3-mile limit are off-limits to artifact collecting without a permit from the North Carolina Department of Cultural Resources. Outside that limit, collecting is legal unless the wreck is subject to an admiralty claim, protected by a sanctuary or historic site designation, or is the naval vessel of a sovereign nation.

Wilmington, a city of about 120,000, offers a variety of accommodations, nightlife, beaches, activities, museums, and shopping, and boasts a historic downtown riverfront. For details and accommodations, contact the Cape Fear Coast Convention and Visitors Bureau at (800) 222-4757 in the U.S. and (800) 457-8912 in Canada.

There are two full-service dive stores in Wilmington: Aquatic Safaris & Diver's Emporium: (910) 392-4-FUN; and Wilmington Scuba and Watersports: (910) 799-0868.

In Southport, there are no dedicated scuba shops. Charters, tanks, air fills, basic gear rental and gear sales are available from Scuba South Diving Co., (910) 457-5201, and Ocean Outfitters, (910) 457-0433.

Southport is a quiet, family-oriented town with a limited number of hotel rooms but an array of restaurants ranging from Thai to Calabash seafood (that's battered and deep-fried, ya'll). Oak Island communities of Yaupon Beach and Long Beach offer a variety of accommodations and some beach-oriented nightlife. For more information call Southport 2000, Inc. at (910) 457-7927, or the Southport/Oak Island Chamber of Commerce at (910) 457-6964. The exclusive accommodations of Bald Island are a short ferryboat ride from Southport. For more information, call Bald Head Island Information Center at (800) 234-1666.

hood frequented by juvenile sea bass, juvenile wrasses and gobies. Baitfish hide in a hold from patrolling barracuda, amberjack and cobia.

Other notable wrecks in the area include the *Cassimir*, a 390-foot molasses tanker that collided with a freighter and sank in February 1942. An intermediate to advanced dive in 90 to 120 feet of water, she offers penetration opportunities for trained wreck divers and swim-throughs in the stern for others. *Normania* was a Dutch freighter that sank during a fierce winter storm in January 1924. In 110 feet of water 50 miles off Bogue Inlet, her bow and stern jut up at 45-degree angles from the sand. *Esso Nashville* was another World War II tanker scrapped by a German torpedo. Her bow sits upside down in 115 feet of water 40 miles off Masonboro Inlet. Missing deck plates provide swim-throughs into the cathedral-like interior but take a light and watch for jagged edges.

Diving on the south side of Frying Pan Shoals may mean catching a charter out of Southport. The *City of Houston* is an artifact treasure trove. A fast and luxurious steamer, she ferried supplies between New York and Galveston, Texas, helping to supply the Wild West. On her last voyage in October 1878, her holds stuffed full with general merchandise and Christmas gifts, she encountered a gale and sank in 90 feet of water off the tip of Frying Pan Shoals. Today, the ship is badly broken and scattered across the seafloor, but divers have recovered a long list of artifacts from railroad wheels to children's dolls and corked ceramic urns of mineral water. Several types of artifacts salvaged from the wreck have been donated by Captain Wayne Stickland and are on display in the Southport Maritime Museum.

There are more sites here, including the *George S. Weems*, *Raritan*, *Mt. Durfys* and *YDS-68*. So many, in fact, that the only problem with diving Cape Fear in a weekend is regret for all the dives you didn't make.

Keith Phillips, an associate editor of RSD and a Georgia native, rehydrates after diving with a tall glass of "sweet tea."



# CONTINUING YOUR DIVING EDUCATION

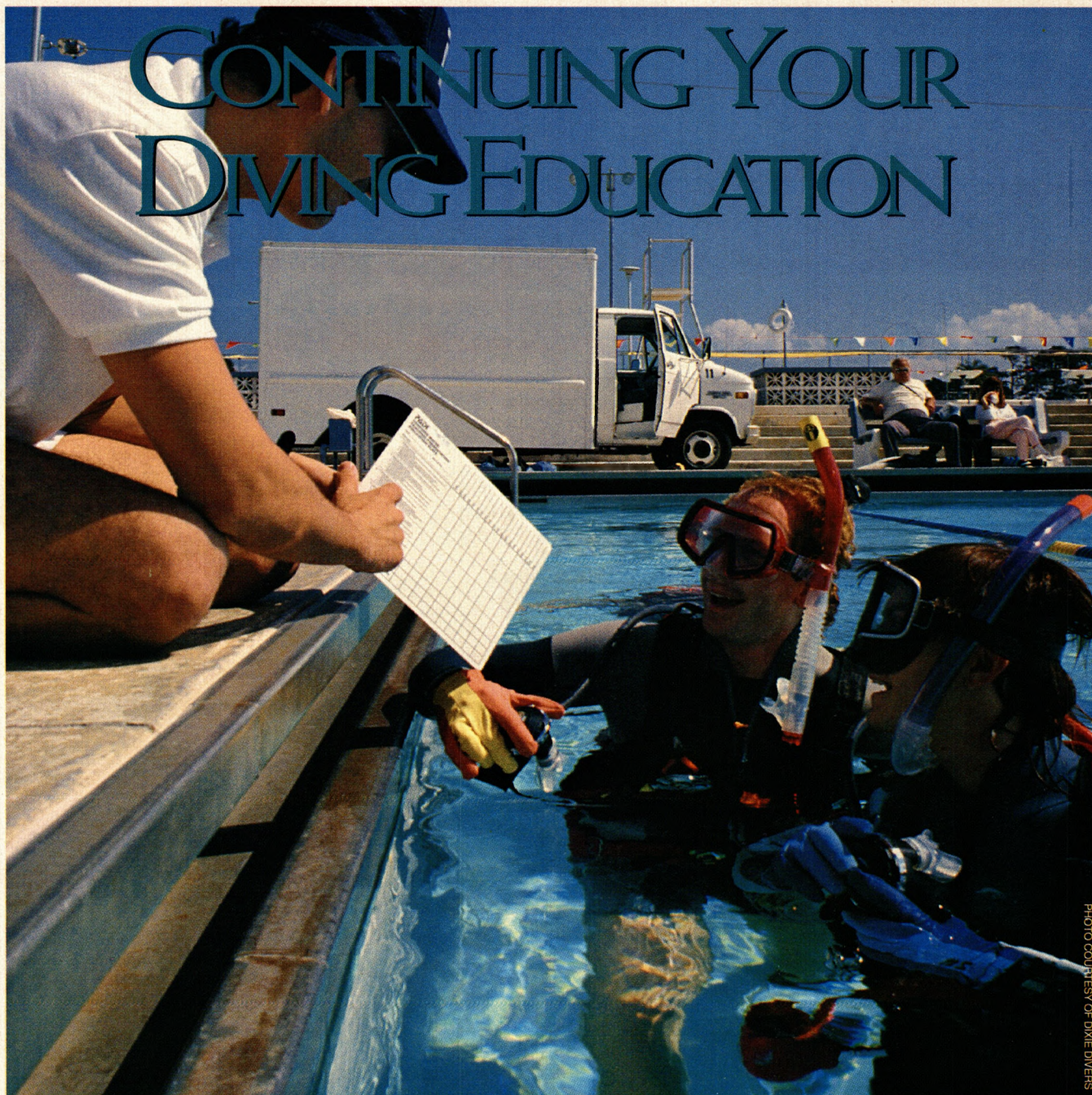


PHOTO COURTESY OF DIVE DIVERS

There's a natural progression in the development of a diving enthusiast. When you first start, any chance to breathe compressed air is undertaken with great enthusiasm. Even during entry-level training, the weekly "pool fix" is an anticipated event. Later, after you've made several dives that don't involve mask clearing or air sharing on demand, you'll discover that scuba diving is simply a means, not an end. This is why specialty training and other continuing education courses are so popular.

The idea behind continuing education is simple. During entry-level training, a student is exposed to so many new concepts and skills that teaching anything beyond the basics hinders the learning process. Anything more would be like trying to teach a baby to play Mozart. By packaging specialty diving instruction into small, independent courses to be taken only after you obtain your C-card, you are able to choose those courses which interest you, and your learning experience is enhanced because you have the skills necessary to attempt the new tasks. Additionally, making your first specialty dives under the supervision of a professional instructor will allow you to learn from their experience rather than trial and error.

The variety and nature of continuing education programs varies with certification agency and instructor. Nevertheless, you can be sure there's a veritable smorgasbord of programs available. Advanced, Rescue, Night Diving, Wreck Diving, Deep Diving, Underwater Photography, Aquatic Life Identification, Drift Diving and Boat Diving are among the more popular continuing education courses.

In most cases, your first step on the ladder of continuing education is the Advanced Course, also known as Open-Water II. This program provides you with a terrific introduction to several specialty areas of diving without going into too much detail. These programs are like the small multi-box packages of breakfast cereal—you get a little taste of each and if you really like one, you can buy the big box!



## RESCUE DIVING

The Rescue course is traditionally the next step in training. Rescue training does more than teach you the skills and techniques of diver assist and rescue. Your awareness of yourself and others around you in the diving environment is sharpened and brought into focus. Divers who are certified in rescue skills make excellent buddies because they are so observant and aware. Rescue certification is a prerequisite for divemaster and other leadership/professional programs.

## INSTRUCTOR TRAINING THAT WILL MAKE YOU... NOT BREAK YOU



Join the team of quality dive instructors today and experience the difference of flexible and affordable training with on-going support.

You will take great pride in helping your students become well-trained, confident, enthusiastic divers.

Join the **elite** group of professionals known throughout the world as **"The Quality Training Agency."**



The Professional Diving Instructors Corporation P.O.  
Bow 3633 Scranton, PA 18505

**CALL TODAY! (717) 342-9434 or FAX (717) 342-1276**

CIRCLE NO. 5 ON READER SERVICE CARD

## NIGHT DIVING

Even if you're afraid of the dark, you've got to try an after dark plunge. Sleeping fish, feeding corals and curious nocturnal critters will captivate your interest and calm your fears. The Night Diving specialty course will introduce you to the techniques, procedures and equipment necessary and your instructor will keep away the monsters.

## WRECK DIVING

Whether you're diving on the remains of a 16th century Spanish galleon, a German "U-boat" or an ore freighter in the Great Lakes, wreck diving is a dive into history. A Wreck Diving specialty course will teach you how to safely explore a wreck and how to learn more about its history.

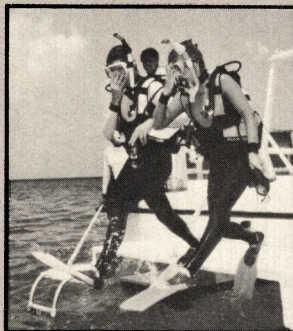
## DEEP DIVING

As an entry-level diver you are wise to limit the depth you dive to 50-60 feet. With advanced training, you can extend your limits down to 80-100 feet. For some, 100 feet just isn't enough, especially if you have an interest in exploring popular wreck sites off the East Coast or Great Lakes. A Deep Diving course will teach you the techniques, procedures and safety measures needed to successfully make no-decompression dives within the limits of recreational diving.

## UNDERWATER PHOTOGRAPHY

Shooting pictures or video underwater is by far the most popular of all specialty activities. Whether you use underwater photography or video as a way to express your creativity or to capture memories to share with friends and family, it can become a highly rewarding pastime. Courses teach the basics of photography, camera use and care, lighting and subject selection. If you get bit by the photo bug, you could be in for many years of great diving and the pictures to prove it.

# TAKE THE FIRST STEP



## TO BECOME A PADI INSTRUCTOR

- ★ Courses Monthly - All Levels
- ★ International Job Placement Service
- ★ Tuition Financing Available
- ★ Accommodations Donated
- ★ All Facilities on one 5-Acre Campus
- ★ Guaranteed Satisfaction & Guaranteed Certification\*

\*Or your money back as reviewed and approved by PADI Int.



**SOUTH EAST DIVING INSTITUTE®**

**CALL NOW!**

**800-FLA-PADI**

**800-352-7234**

PHONE (407) 461-4488 • FAX (407) 466-3444 CURSOS EN ESPAÑOL (407) 468-4809  
1717 SOUTH U.S. 1 • FORT PIERCE, FLORIDA 34950

Licensed by the Florida State Board of Post Secondary Schools - License #908

CIRCLE NO. 3 ON READER SERVICE CARD



## AQUATIC LIFE IDENTIFICATION

Many of you started diving to pursue your interest in under-water life. With the great diversity of life to be found in the world's oceans as well as in fresh water, you could spend a lifetime diving and not see it all. Aquatic Life Identification courses teach you the basics of Aquatic Biology and Ecology, emphasizing local plants and animals, so that on your next dive you'll know what that green slimy-looking thing is.

These are just a few of the many specialty courses available. Your choice of courses is as varied as the instructors who teach them. So on your next dive, try doing more than blowing bubbles. Take a picture, fish count, explore a wreck . . .

## INFORMATION ON CONTINUING EDUCATION

### DIVERS INSTITUTE OF TECHNOLOGY

Seattle, WA  
206-783-5542

### DIXIE DIVERS

Ft. Pierce, FL  
800-456-2188 or 407-461-4488

### NAUI

Montclair, CA  
800-553-6284

### PADI

Santa Ana, CA  
800-729-7234

### PDIC

Scranton, PA  
717-342-9434

### SCUBA EMPORIUM

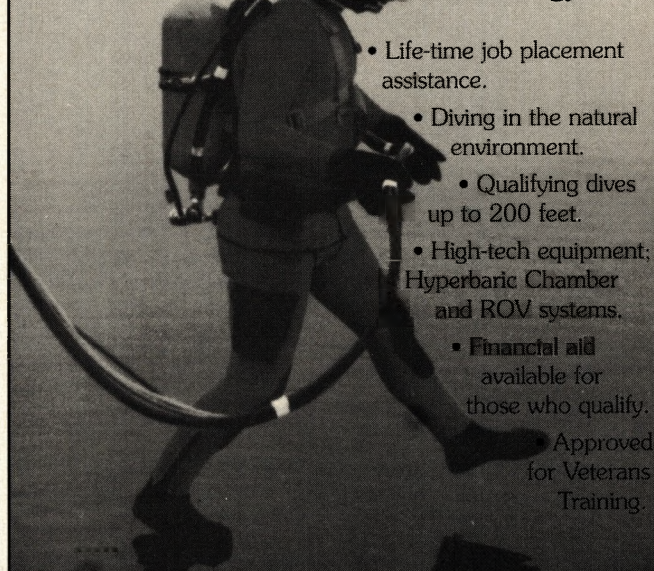
Alsip, IL  
708-389-9410

### U.S. 1 SCUBA INC.

Pompano Beach, FL  
305-946-6055

# Walk On Water?

Probably not... But working underwater as a skilled commercial diver, you'll be in demand... Expect challenge, reward and travel. **Divers Institute of Technology** offers:



- Life-time job placement assistance.
- Diving in the natural environment.
- Qualifying dives up to 200 feet.
- High-tech equipment; Hyperbaric Chamber and ROV systems.
- Financial aid available for those who qualify.
- Approved for Veterans Training.

CALL TODAY FOR YOUR CAREER PACKAGE



**1-800-634-8377**

U.S. and  
Canada

In Seattle, call: (206)783-5542

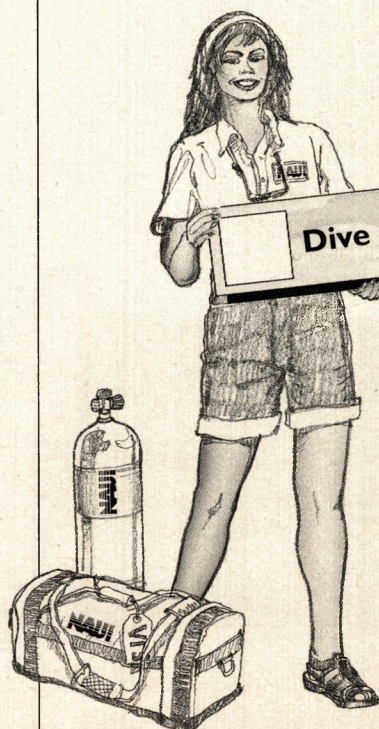
**DIVERS INSTITUTE OF TECHNOLOGY**

"Established 1968"

Seattle, WA

CIRCLE NO. 2 ON READER SERVICE CARD

## Now THAT "YOU'VE GOTTEN YOUR FEET WET" ...TAKE THE NEXT STEP!



☒ **Basic Specialty Diver**

|                 |                          |
|-----------------|--------------------------|
| Night Diving    | UW Photography           |
| UW Video        | Search & Recovery        |
| Navigation      | Training Assistant       |
| UW Environment  | Hunting & Collecting     |
| Dry Suit Diving | Computer-Assisted Diving |

☐ **Advanced Diver**

☐ **Advanced Specialty Diver**

|                     |                      |
|---------------------|----------------------|
| Ice Diving          | Cavern Diving        |
| Cave Diving         | Coral Reef Ecology   |
| Kelp Forest Ecology | UW Ecologist         |
| River Diving        | High Altitude Diving |
| Nitrox              | Kayak Diving         |



**(800) 553-6284**

**Safety Through Education**

CIRCLE NO. 4 ON READER SERVICE CARD



# AIR TIME

Minute by minute, these air-integrated computers track depth, tank pressure, time and tables.

ScubaLab™ testers pummeled the current crop of contenders in a quest for the best.





BY JON HARDY, JOHN BRUMM AND VAL HODGES-PALMER





# PREDICTION: BY THE YEAR 2000, VIRTUALLY EVERY RECREATIONAL DIVER WILL BE USING A DIVE COMPUTER, VERY LIKELY AN AIR-INTEGRATED COMPUTER LIKE THE ONES IN THIS THIRD AND FINAL INSTALLMENT OF OUR GROUND-

breaking series of test reports. Why? Not since the advent of the BC has a piece of diving equipment had such a positive impact on recreational diving. Certainly, dive computers make scuba diving easier, eliminating the need to constantly second-guess your decompression status, particularly while you're in the water. On a more mundane level, dive computers don't forget to log information, and most of them don't forget to turn themselves on and off. Unlike mere mortals, dive computers don't make math errors nor do they transfer information incorrectly.

But the real benefit of diving with a computer is that it enables you to spend more time under water *more safely*. This is because dive computers use actual dive profiles, not the approximations of dive tables, and they allow for longer multilevel dives. Dive computers provide readouts for dive planning and offer more effective ways to incorporate safety margins. They have more conservative no-decompression limits than the U.S. Navy tables, make outstanding ascent monitors and have built-in warning devices to keep your attention on the business at hand.

Consider, too, a dive computer's ability to intelligently change dive plans for a once-in-a-lifetime photo opportunity or a sudden underwater emergency, as well as the ability to make dives out of order (i.e., deep after shallow) when dive conditions, dive activities or

environmental conditions require it. Add to all this the computer's ability to increase your margin of safety based on actual dive conditions and you've got the most reliable dive buddy you'll find anywhere.

## Testers From Hell

A team of five ScubaLab™ technicians conducted a grueling two-week testing regimen that took seven air-integrated diving computers on wet and dry test dives in the waters off California's Catalina Island as well as in a hyperbaric chamber.

In the chamber, all seven computers were first hooked up to a specially designed high-pressure multiport coupler that connected to a single scuba tank. This ensured that all computers were subjected to identical pressure variances throughout the evaluation process.

The ocean testing regimen included a series of deep dives and a sawtooth dive that alternated between depths of 60 and 100 feet during five complete cycles. Each computer was subjected to fast-ascent tests to evaluate fast-ascent warning systems, and night dives to determine how easy or difficult it was to read screens with a diving light or, if the computer provided its own light source, how well it was illuminated. Throughout the progression of ocean dives, in shallow water and deep, in varying light and viewing angles, attention was paid to just how easy it was to read these

computer screens, and how easy it was to understand the messages on the screen.

Back on the surface, the screen evaluations continued, as testers retrieved information, including adjusted no-decompression limits, time to fly and the depth and time of prior dives.

Chamber testing, conducted in the Catalina Hyperbaric Chamber at USC's Wrigley Marine Science Center, began with a simulation of a typical day of diving: a dive to 100 feet followed by a surface interval and then two progressively shallower dives. The next day, the computers were taken on a multilevel deep dive starting at 130 feet, ascending to 60 feet, then back to 100 feet, with a gradual multilevel ascent to a 15-foot safety stop. After an hour on the surface it was back down to 130 feet for 15 minutes of bottom time before easing up to the shallows and on to a safety stop.

Following this regimen, the computers were intentionally violated to see how they would react. After they cleared, they were put back into the chamber for a series of five bounce dives to 130 feet, interspersed with one-hour surface intervals.

Altogether, each computer made a total of 11 chamber dives and nine controlled open-water dives. Dozens of additional open-water dives were made to establish baselines for testing and to verify individual features or performance.



## AIR-INTEGRATED COMPUTERS: FEATURES AND EVALUATIONS

### UNDERSTANDING THE FEATURES CHART

All information in the features chart was supplied by manufacturers. The meaning of most categories is self-evident. Keep in mind: If the *Ascent Rate* varies, it will become slower as you approach the surface. Our tests show that *Temperature Gauges* respond to changes slowly and can vary two to six degrees from one computer to another. *Base Price* is the manufacturer's suggested retail price for a computer purchased in its most basic form without options and not taking into account discounts or sales.

### UNDERSTANDING THE EVALUATIONS CHART

Information presented in this chart is based on the results of ScubaLab™ evaluations.

► **AUTOMATIC ACTIVATION BY HP:** Computers without it are manually activated by pushing a button, with the exception of the *Nemesis*.

► **USER-REPLACEABLE BATTERIES:** Eliminate the need to go to your dealer or have the unit returned to the factory.

► **LIGHT OR AUDIBLE ALARM:** Flashing lights or beeps emitted from a computer that get your attention.

► **USE OF GRAPHICS FOR N<sub>2</sub> LOADING:** Indicates visually how much nitrogen the computer's model is showing for the most loaded tissues, and allows you to make or change your dive plans.

► **USE OF COLOR ON DISPLAY:** Provides additional warnings or highlights the use of graphics.

► **GOOD INSTRUCTIONS:** Owner's manuals were reviewed by multiple testers for completeness, clarity and correctness.

► **WATERPROOF PROMPT CARD; INSTRUCTIONAL VIDEO:** Valuable aids for getting to know how to operate the computer, both before and during diving.

► **INTERNAL ILLUMINATION; DIVE PROFILER AND DOWNLOAD TO A PC:** Definite pluses for modern dive computers.

► **TIME TO FLY CALCULATED AND DISPLAYED:** Should be a calculated number, not an arbitrary count-down, and displayed in hours, not merely with an icon.

► **TIME TO DESAT DISPLAYED:** Time to desaturation is calculated by all computers, but must be displayed to be used.

► **DOES NOT ALTERNATE DISPLAY U/W:** Screens that alternate dis-

plays while on a dive can be confusing and annoying.

► **DISPLAYS FULL NDL (NO-DECOMPRESSION LIMIT) FOR SHALLOW DEPTH:** Computers which show actual time (instead of displaying a standard "99-plus" minutes) give the user a better idea of nitrogen loading status.

► **PROVIDES DECO TIME AT STOPS:** Crucial information if you plan decompression dives or inadvertently go into decompression status.

► **SELECTION OF NDL:** The ability to select no-decompression limits allows you to customize the computer to particular dive conditions, activities or physical conditioning.

► **DOES NOT LOCK OUT FOR DECO VIOLATION:** Clearly warns and penalizes you but continues to function as a dive computer if you go beyond its programmed decompression limits, rather than locking you out and becoming a depth gauge/timer.

► **DISPLAYS AIR/DECO TIME CONTINUOUSLY:** These items of information are available to you at all times during the dive rather than the computer giving you only the lesser of the two.

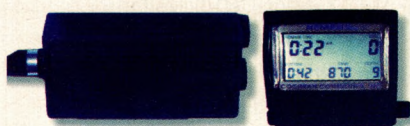
| COCHRAN NEMESIS | DACOR OMNI PRO | OCEAN EDGE COMPUTEK II | OCEANIC DATAMAX PRO | ORCA EIT PHOENIX | SEA QUEST EON | U.S. DIVERS SCAN 4 |
|-----------------|----------------|------------------------|---------------------|------------------|---------------|--------------------|
|-----------------|----------------|------------------------|---------------------|------------------|---------------|--------------------|

| Features    | Max Depth (feet)                           | 250 FW/SW   | 250 SW     | 220 SW    | 249 SW      | 299 SW     | 325 SW     | 249 SW     |
|-------------|--------------------------------------------|-------------|------------|-----------|-------------|------------|------------|------------|
|             | Ascent Rate                                | 60          | 60, 45, 30 | 30        | 60, 40, 30  | 60, 40, 20 | 33         | 60         |
|             | Max Altitude (feet)                        | 15,000      | 10,000     | 10,000    | 14,000      | 14,000     | 8,000      | 15,000     |
|             | Log Book                                   | 9 1/2 hrs   | 9          | 9         | 9           | 3          | 25 hrs     | 9          |
|             | Temperature Gauge                          | Yes         | yes        | yes       | no          | yes        | yes        | no         |
|             | Dimensions (inches)                        | 3.05 X 2.68 | 9.88 X 2.8 | 5.2 X 3.6 | 7.00 X 2.88 | 6.5 X 2.75 | 3.75 X 2.8 | 5.00 X 3.1 |
|             | Base Price                                 | \$850       | \$796      | \$699     | \$699       | \$699      | \$775      | \$720      |
| Evaluations | Automatic Activation by HP                 |             |            | o         |             | o          | o          |            |
|             | User-Replaceable Batteries                 | o           | o          | o         | o           | o          | o          | o          |
|             | Light or Audible Alarm                     | o           | o          |           | o           | o          | o          | o          |
|             | Use of Graphics for N <sub>2</sub> Loading |             |            | o         | o           | o          |            | o          |
|             | Use of Color on Display                    |             |            | o         | o           |            | o          | o          |
|             | Good Instructions                          | o           | o          |           | o           | o          | o          | o          |
|             | Waterproof Prompt Card                     |             | o          |           |             |            |            |            |
|             | Instructional Video                        |             | o          |           |             |            | o          |            |
|             | Internal Illumination                      |             |            | o         |             |            |            |            |
|             | Dive Profiler and Download to a PC         | o           |            |           |             | o          | o          |            |
|             | Time to Fly Calculated and Displayed       |             |            |           |             | o          | o          |            |
|             | Time to Desat Displayed                    |             | o          |           |             |            | o          |            |
|             | Does Not Alternate Display U/W             | o           |            | o         |             | o          | o          |            |
|             | Displays Full NDL for Shallow Depths       | o           | o          | o         | o           | o          | o          | o          |
|             | Provides Deco Time at Stops                | o           | o          | o         | o           | o          | o          | o          |
|             | Selection of NDL                           |             |            | o         | o           | o          | o          | o          |
|             | Does Not Lock Out for Deco Violation       |             |            |           | o           |            |            |            |
|             | Displays Air/Deco Time Continuously        |             | o          | o         |             | o          | o          |            |



## Comparative Evaluations

The first of a new generation of hoseless dive computers, the Nemesis consists of a transmitter that attaches to the



COCHRAN NEMESIS

first stage of your regulator and a display screen that straps to your wrist. A conservative computer, the Nemesis is loaded with innovative features. For

example, the BP feature, or breathing parameter, is invaluable for monitoring air use and stress level. An excellent profiler is offered along with PC downloading capability. An instructor's version of the Nemesis provides data from units worn by students. A programmable nitrox version is also available, as is a slightly more liberal Pro model.

For the average recreational diver, the Nemesis might seem complex. Start-up involves turning on the air, tapping the sending unit and then pushing the button on the receiver. Once you're in the water, several situations can cause the unit to withhold information: if the wrist unit is too far from the tank unit, decompression violations, low battery and diving too deep. Some interesting technology here, but there's room for refinement.

PHOTOS BY STEVE ESIG

## FREEDOM TO DIVE VS RISK OF DCS

| ← More Freedom, More Risk ————— Less Freedom, Less Risk —→ |  |           |                                  |                                                                                                                      |                                                                |                            |                               |  |       |
|------------------------------------------------------------|--|-----------|----------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------|-------------------------------|--|-------|
| LIBERAL                                                    |  | Bravo One | Divemate<br>Marathon<br>Phoenix* | Omni<br>Bridge<br>DataMax Sport<br>Companion<br>Solution<br>Source<br>Imprex<br>Omni Pro*<br>DataMax Pro*<br>Scan 4* | Aladin Pro<br>Aladin Sport<br>Legend<br>Monitor 1<br>Monitor 2 | Encore<br>Eon*<br>Nemesis* | MC40<br>DC-II<br>Computek II* |  | DC-12 |
|                                                            |  |           |                                  |                                                                                                                      |                                                                |                            |                               |  |       |
|                                                            |  |           |                                  |                                                                                                                      |                                                                |                            |                               |  |       |
|                                                            |  |           |                                  |                                                                                                                      |                                                                |                            |                               |  |       |
|                                                            |  |           |                                  |                                                                                                                      |                                                                |                            |                               |  |       |
|                                                            |  |           |                                  |                                                                                                                      |                                                                |                            |                               |  |       |
|                                                            |  |           |                                  |                                                                                                                      |                                                                |                            |                               |  |       |
|                                                            |  |           |                                  |                                                                                                                      |                                                                |                            |                               |  |       |
|                                                            |  |           |                                  |                                                                                                                      |                                                                |                            |                               |  |       |
|                                                            |  |           |                                  |                                                                                                                      |                                                                |                            |                               |  |       |
| CONSERVATIVE                                               |  |           |                                  |                                                                                                                      |                                                                |                            |                               |  |       |

\* air-integrated computers

The more liberal a dive computer, the greater your freedom to dive but the greater your risk of DCS—and the greater your responsibility in using the computer. Naturally, the converse is also true.

Since dive computers vary tremendously on any one dive profile, the ScubaLab™ test team took all computers tested (both air integrated and non-air-integrated from last month's report) and compared them during 15 recreational dive profiles, including single dives, repetitive multiday dives, altitude dives, deep dives, sawtooth dives and so on.

We ranked each computer on a dive by its no-decompression limit performance. We then derived an overall average for all computers on all dives. This overall average is the centerline, the reference point used in positioning computers according to their individual performance. The listings in each vertical row include the computers that performed nearly the same. They are presented in alphabetical order by manufacturer with the air-integrated units listed last and identified by an asterisk.

Many computers can be made more conservative by one of several procedures controlled by the diver, making it possible to distance yourself from the risk of DCS by voluntarily limiting your diving or, in other words, backing off.

The most foolproof way to back off a computer's no-decompression limits involves those dive computers that have a manual

adjustment for normal/difficult or for altitude. Changing the setting allows you to preset the computer to be more conservative. These models include the Bravo One, Divemate, Bridge, Companion, Solution, Imprex, Eon and DC-12.

Another way to back off is to use a computer's graphic display to stay away from the limits: Dive computers with a graphic display that can be backed off while in use: Bravo One, Phoenix, DataMax Sport, Source, DataMax Pro, Scan 4, MC40 and Computek II. This procedure offers convenience and flexibility, allowing the diver to build in conservatism even in the middle of a series of dives without altering the computer.

This "Freedom vs Risk" chart is based on several important principles about dive computers that should be kept in mind when preparing to purchase or use one:

1. Different dive computers with similar algorithms and no-decompression limits will perform nearly the same.
2. A dive computer's performance during repetitive multilevel dives will be the greatest single factor in predicting how liberal or conservative it will be in overall performance.
3. The rule that requires you to "dive the most conservative computer" if computers differ makes no sense given the disparities among computers (see "Chips Ahoy," July '94).
4. You can make a liberal computer more conservative by backing off, but when you violate a conservative computer (except one), it will lock you out, ending its usefulness.

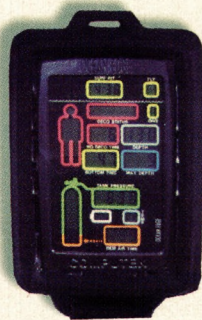




DACOR OMNI PRO

The Omni Pro is like the non-air-integrated Omni but has a pressure gauge. Like the Omni, the Omni Pro features large, clear numbers and uses a decompression bar graph to signal approach to decompression. The bar graph doubles as a decompression indicator. For safety, there's a built-in deep-diving penalty that restricts repeated descents to greater depths. The Pro stores nine dives in memory and is the only air-integrated computer to include a waterproof prompt card.

However, like the Omni, the Pro's display is not as intuitive as other computers. Abbreviations appear on the screen that are difficult to decipher—here's where you give thanks for the waterproof prompt card. Fortunately, the display is most confusing while in the surface mode; once you get below the surface the computer becomes much easier to understand.



OCEAN EDGE  
COMPUTEK II

The Computek II is distinctive in its use of pictographs and colors. It's also the only air-integrated computer with an automatic back-lighting system that casts a soft-red glow across the display. This feature radically increases readability during dim-light diving and makes the conservative Computek II the most readable for night diving.

The Computek II, however, is not for everyone. While the display design is fairly intuitive, the numbers are small, which may make it difficult to read. The complex display of

numbers and graphs can be a bit overwhelming for some divers.

A DataMax Sport with a pressure gauge, the Pro earns high marks for its use of graphics to provide at-a-glance information on available air, ascent rate and saturation. The red-yellow-green color system used on several other computers is put to maximum use with the Pro. Ingeniously intuitive, you simply stay out of the red zone, avoid the yellow zone and surface in the green zone.

The Pro, which also calculates air consumption, indicates that you have no air time remaining when there's still 300 psi in the tank, a dubious safety feature—until that moment when you desperately need 300 psi. With both the DataMax Sport and the Pro, Oceanic continues to provide some of the best instructions in the industry. As with a few of the other computers, the Pro has a restriction on repetitive deep-diving profiles.

On the downside, at depth the DataMax Pro will display either remaining air or bottom time, whichever is less. No big deal for some divers, but if you like to know what your no-decompression limit is at all times, this design characteristic might be a concern.



ORCA  
PHOENIX BY EIT

While still a very liberal dive computer, the newer Phoenixes use a slightly more conservative program than Orca's Marathon or Edge. The Phoenix is also the only air-integrated computer that will not lock you out for a decompression violation, but it will warn and penalize you. The Phoenix displays a great



OCEANIC  
DATAMAX PRO

deal of information, but the screen is relatively clean and numbers are easy to interpret. EIT, Orca's parent company, provides software that allows you to download your dive information to a PC.

The Phoenix offers a low-battery indicator that provides plenty of warning, a good feature since the Phoenix tends to need battery changes more often than other computers. But the batteries are user-replaceable and you can switch batteries without losing memory. A nonprogrammable nitrox version of the Phoenix is also available.



SEA QUEST  
EON

Made by Suunto for Sea Quest, the Eon offers a more conservative program than either the Companion or the Solution, Sea Quest's two non-air-integrated dive computers. The Eon is also not as easy to read or to understand as the Companion and Solution, known for their user friendliness.

However, the Eon is a feature-loaded computer that includes a calendar and clock function, a dive simulator and PC compatibility. It comes with an excellent instructional video, and is one of only two air-integrated computers that display time to desaturation as well as calculating and displaying time to fly.



U.S. DIVERS  
SCAN 4

Because U.S. Divers refused to participate in these dive computer evaluations, the ScubaLab™ team purchased a Scan 4 from a U.S. Divers dealer. The Scan 4 is similar to Oceanic's DataMax Pro, providing excellent graphics and incorporating the highly effective red-yellow-green color system. There's also a built-in restriction on



Divers doing it above 1,000 feet (altitude diving) now have reason to rejoice:

One of the most common features that you'll find on today's dive computer is the ability to adjust to the lofty reaches of mountain lakes. All but two of the dive computers tested by the ScubaLab™ team were capable of taking divers to a minimum of 8,000 feet elevation.

Three types of adjustment for altitude are found on today's computers:

1. Continuous self-adjustment (no action required by user)
2. Programmable adjustment (requiring manual setting by the user)
3. Activated self-adjustment (requiring a button to be pushed before automatic adjustment will occur)

Those that manually adjust have the added capability of being used at sea level while in the altitude setting, resulting in more conservative no-decompression limits for divers who wish to build in an extra measure of conservatism. Of course this means the user must learn to access this feature to change the setting—simple on some models, but no easy feat with others.

While self-adjusting models don't suffer from this problem, they also don't offer the option of internally setting more conservative no-deco limits.

### INTO THE OZONE

Of the concerns the ScubaLab™ team had with dive computers at altitude, the wide disparity between no-decompression limits and the function of the unit upon descending from elevation caused the most consternation.

We found wide variations of no-decompression limits

among computers designed to be used at altitude. For example, at an elevation of 5,100 feet, the no-decompression limits for a dive to 50 feet varied between 40 and 70 minutes; at 90 feet, limits varied between 12 and 20 minutes; and at 120 feet, limits varied between 6 and 12 minutes. Talk about truth being a moving target!

The second concern blew in like bad weather as we completed our altitude dive and began to wind our way back down the mountain. As we descended, the pressure change tricked most of the dive computers into a "dive." While we understood why this happened (the increasing pressure simulates a dive), it raised two important questions:

1. Why do computers' instruction manuals say nothing about this?
2. What if the user wishes to dive at a lower elevation while the computer is performing this bogus "dive"?

Given time, the dive computers managed to correct themselves and return to normal function, but this experience made us contemplate the significance of taking self-adjusting dive computers on airplanes before or after dives at altitude.

### OF MOUNTAINS AND MOLE HILLS

While there are clearly a few mountains to be climbed in the design and use of dive computers at altitude, the units do appear to function as they are meant to and do provide information faithfully.

Divers seeking to reach ever upward in their diving activities will find that these units offer the kind of freedom and flexibility they've come to expect from dive computers.

deep dives. Like the DataMax Pro, the Scan 4 does not display air and NDL time simultaneously, only whichever is less. When the Scan 4 reads zero air time remaining, you still have 300 psi in your tank.

### Take Care Of It, And It'll Take Care Of You

Given the environmental stresses of temperature change, pressure, shock and chemical changes that dive computers are subjected to, it's remarkable how reliable these sensitive electromechanical devices are. However, despite their excellent track record for dependability, computers do fail. This failure can be mechanical (transducer failure), electrical (a broken circuit) or perhaps even inherent design

flaws and quality-control problems.

But by far the most common causes of computer failure are ones you can prevent. Here's how:

► Read the instruction manual thoroughly and pay particular attention to care and maintenance sections plus battery-changing procedures.

► Make sure the computer receives proper maintenance, cleaning and storage, especially keeping it out of direct sunlight, rinsing in fresh water and protecting it from physical shock.

► Attach the computer so that shock is reduced. Hose- or wrist-mounted units can get tangled or receive a blow during water entries and exits.

► Replace low batteries promptly, and be aware that some units will lose memory and desaturation calcu-

lations in the process. Plan ahead before long trips to ensure adequate battery power. User-replaceable batteries must be changed with strict attention to cleanliness and dryness.

► Observe the unit closely upon activation; this is when most failures occur. If it fails to complete the self test or displays an error message, try re-activating the unit. The emphasis here is on activating your computer on deck—*before* you jump in—and then watching what it does.

If a failure occurs under water, your action depends on the situation. The best advice is to go to 15 feet and conduct a safety stop (or decompress for as long as is practical if you believe you may have gone into decompression status). This reinforces the good sense of (Continued on page 111)



# AIN'T MISBEHAVIN'

BY DOUG PERRINE

**W**hen we first start to dive, we usually see only two fish behaviors: concealment and flight, as most fish turn tail to escape the bubble-blowing, arm-waving, bottom-kicking invaders from another world. Hard to blame them.

As we become more calm under water, gaining control of breathing and buoyancy, we begin to notice fish doing all sorts of weird things usually seen only at fraternity parties: chasing each other in circles, hanging upside down with their mouths open while other creatures crawl around inside, waving antennae at each other. What's going on here? Unlike college students, every action that you see down below has meaning in the fish's life, helping it either to survive or reproduce. Here's a crash course to help you join the party.

## ONCE IS NOT ENOUGH: SPAWNING

Except for sharks and rays (which have internal fertilization, like us) fish don't mate—they spawn. The female deposits eggs in a nest or squirts them into the water, and the male releases his sperm over them. You usually see fish spawning around dusk or dawn, although many wrasses and parrotfish, the sea's randiest creatures, do it throughout the day, as often as five times.

How do you recognize spawning behavior? It's usually preceded by courtship, which involves circling, chasing, nudging, dancing or waving fins. Any fish that rapidly changes color or exhibits an unusual color pattern is probably engaged in courtship. Success often results in the male and

**Eat, fight, spawn, get cleaned—when you come down to it, we're a lot like fish.**

female rushing toward the surface then releasing their sperm and eggs in a white puff at the climax of their climb. Short but intense. During late afternoon dives over active reefs, the water column can actually become cloudy with gametes and eggs floating in milky swirls.

Normally solitary groupers aggregate in large groups to spawn at certain times of the year and exhibit unusual color changes: The Nassau grouper loses its stripes for a two-tone tuxedo look—black on top, white on bottom—in anticipation of the big event. Hamlets, smaller cousins of the grouper, spawn several times in succession at sunset, each fish alternating sex roles. As spontaneous hermaphrodites, hamlets have both testes and ovaries. Other fish team up for life:



CLOCKWISE FROM TOP LEFT: A LONGLURE FROGFISH MESHES WITH SURROUNDING SPONGES (CAMOUFLAGE); ORANGE BASSLETS PREPARE TO HIDE AMONG A TOXIC CROWN OF THORNS SEA STAR (PROTECTION); SHARKNOSE GOBIES GIVE A TIGER GROUPEE ITS REGULAR CLEANING (SYMBIOSIS); A MALE SERGEANT MAJOR DAMSELFISH GROOMS AND TENDS A PATCH OF RED OVA (PROTECTING EGGS).

angelfish and butterflyfish are typically seen in romantic pairs.

## EN GUARD: PROTECTING EGGS

Fish that keep eggs on the reef have to defend them from

PHOTOGRAPHY BY DOUG PERRINE



# FREE DIVE INFO

Simply tear out the reply card, circle the numbers preceding the names of the companies which interest you, fill out your name and address, and drop it in the mailbox. (We've paid the postage!) You'll soon be receiving information which will help make your diving more enjoyable!

## LIMITED TIME OFFER\*

### DIVE EDUCATION & INSTRUCTION

1. DAN See ad pg 100
2. DIVERS' INSTITUTE OF TECHNOLOGY See ad pg 85
3. DIZIE DIVERS - Information on PADI Instructor Training. Includes all levels from advanced through Resort Housing donated to first 16 students. Full placement service. Approved for Veterans' training. See ad pg 84
4. NAUI - The NAUI guide to scuba leadership step-by-step information on training for, and entering quality NAUI scuba leadership programs. 1-800-553-NAUI See ad pg 85
5. PDC International is recognized world-wide for quality instructor training. PDC has 30 years experience in dive instruction, development, and teaching. Send for more information. See ad pg 84

### DIVE EQUIPMENT

7. BROWNIE'S THIRD LUNG Four-color pictures, descriptions, and specs on wide choice of surface supplied air and tank-BL compressor systems. 1-800-327-0412 See ad pg 116
8. IDEATIONS DESIGN INC. To find out if divers let you equipment, and for the dealer nearest you, call 1-800-275-4332 See ad pg 116
9. ZEAGLE SYSTEMS, INC. See ad pg 110
10. OCEANIC See your local authorized Oceanic Dealer for a free copy of Oceanic's catalog of diving essentials (while supplies last). 1-800-827-3483 See ad pg 3
11. SCUBAPRO - For the Scubapro dealer nearest you, call 1-800-GO-SCUBA See ad pg 9
12. SHERWOOD SCUBA A manufacturer of high quality recreational scuba equipment. Their 32-page full-color catalog provides photos and descriptions of all Sherwood products. 4TH COVER

### DIVE TRAVEL & DESTINATIONS

13. ADVENTURE EXPRESS TRAVEL See ad pg 115
14. ANTHONY'S KEY RESORT Discover our dolphins at the Institute for Marine Sciences. Experience spectacular diving, instruction, Photo Roatan, Roatan Museum and Mother Nature at her finest. 1-800-227-3483 See ad pg 109
15. AQUA NAUTS See ad pg 113
16. AQUA NUTS / KELLY'S ON THE BAY See ad pg 115
17. BAHAMA ISLAND ADVENTURES Call for a free full-color brochure/rate card with over 15 photographs of the resort. Diving, dive boat, and Bimini. All-inclusive packages from \$349. See ad pg 114
18. BAHIA TOURS Dive travel wholesaler for the Caribbean. Rustic to luxurious, laid back to gambling. Magnificent live-aboards. Jungle adventure to romantic white sand beaches. Free information. 1-800-443-0717 See ad pg 114
19. BARBACHANO TOURS See ad pg 113
20. BAYMAN BAY CLUB Bay Islands, Honduras. Seduced hillside cottages overlooking private bay and beach. Celebrating our 19th year, same owner since 1974. Rated #2 dive destination in the Caribbean. 1-800-524-1823 See ad pg 113
21. BLACKLINE MARINE AND DIVE SHOP - Belize City. Daytrips or Caribbean coveaway packages to the barrier reef, cays and atolls. 011-501-23-3187 See ad pg 115
22. CARIBBEAN ADVENTURES Free information on dive travel to the Caribbean, Mexico, and Central America. Special trips scheduled for beginner and experienced divers. Call 1-800-934-DIVE See ad pg 115
23. CARIBBEAN ADVENTURES Free information on dive travel to the Caribbean, Mexico, and Central America. Special trips scheduled for beginner and experienced divers. Call 1-800-934-DIVE See ad pg 114
24. CAYMAN DIVING LODGE See ad pg 24
25. COSTA RICA TOURIST BOARD Dive the deep blue surrounded by unique tropical fish, shark action and coral reefs. Don't miss the adventure of a lifetime! 1-800-327-7033 See ad pg 102
26. DIVE DIVE DIVE Detailed information on Nitrox. Complete dive package information. Tongare or ocean diving. 1-800-368-3483 See ad pg 101
27. DIVE PROVO - Experience frontier diving - the Walls of Northwest Point and Wild Caicos. PADI 5-star facility. Complete photo / video center. Great Packages! See ad pg 21
28. DIVE TOURS Product summary including complete dive vacations to over 20 destinations. Featuring world class resorts & live aquariums with schedule and charter. Air discounts. 1-800-433-0885 See ad pg 105
29. DIVE TOURS / APPLE VACATIONS See ad pg 104
30. FANTASIA DESTINATIONS / HOTEL SOL CARIBE Specializing in dive travel to Cozumel, Cancun, Miami, Loreto, and Belize and Roatan. 1-800-336-3483 See ad pg 113
31. FANTASY ISLAND BEACH RESORT Resort on a palm-studded, 17-acre island. Lushly landscaped with natural flora. 70 beachfront rooms, fully air-conditioned, superb diving, offshore diving, and 5 dive boats. 1-800-676-2826 See ad pg 109
32. FISH N FINS DIVE PALAU Walk, weeds, caves. Let our friendly local crew cater to your individual needs in one of the underwater wonders of the world. 011-680-488-2637 See ad pg 111
33. GREAT SOUTHERN See ad pg 113
34. INNERSPACE ADVENTURES See ad pg 115
35. LIGHTHOUSE REEF RESORT Full-service resort near the Blue Hole on a private island. Three boat dives per day, including night dives. Air-conditioned cabanas and airstrip. 1-800-423-3114 See ad pg 111
36. MV HOT DIVE 1-800-HOT-DIVE See ad pg 102
37. MV HOT DIVE 1-800-HOT-DIVE See ad pg 114
38. MANTA RAY BAY & YAP DIVERS Send for current rate sheets, brochure, current Yap Divers newsletter, plus available magazine reprints. See ad pg 114
39. MELIA MAYAN COZUMEL More than just great diving! Enjoy five-star ocean front luxury with

- private beach, two pools, two restaurants, color satellite TV & more. 1-800-336-3542 See ad pg 107
40. NEKTON DIVING CRUISES Introducing a remarkable live-aboard designed for smooth sailing and hassle-free diving. Departs Ft. Lauderdale to remote Bahamas. Send for information and itinerary of maiden voyages. 1-800-899-6753 See ad pg 106
41. OFF THE WALL DIVERS Spectacular wall dives just minutes from hotel, beach. Full PADI instruction, resort courses, night dives, retail dive & t-shirt shop. Personalized diving service. 35' and 26' dive boats. See ad pg 110
42. OLYMPUS DIVE CENTER See ad pg 114
43. PLAZA LAS GLORIAS See ad pg 6
44. POSADA DEL SOL 1-800-642-3483 See ad pg 99
45. RALPHIES See ad pg 113
46. RAMON'S VILLAGE Full-color brochure of Ramon's Village featuring 60 palm-fringed cabanas on the beach at Ambergris Caye Belize. 1-800-624-4215 See ad pg 114
47. RIDING ROCK INN Dive with San Salvador's experts. Wall diving at its best! Packages include accommodations, 3 meals daily, 3 dives daily. Special charter flights from Ft. Lauderdale. 1-800-272-1492 See ad pg 95
48. ROATAN CHARTERS Honduras adventure travel catalog and Cooview Resort and Uula Lodge. 1-800-282-8932 See ad pg 115
49. SAM'S DIVE TOURS 011-480-488-1062 (FAX) 011-480-488-5003 See ad pg 114
50. SAND DOLLAR CONDOMINIUMS 1-800-288-4773 See ad pg 18
51. SEA SAFARIS See ad pg 6
52. SEA SAFARIS / DIAMOND RESORT See ad pg 96
53. SEA SAFARIS / QUABBIN CO-OP Quabbin Dives. Cayman's second oldest dive operation offers Free shore diving, Free hotel/condo p/u, 1 free for every 10 paid, wall dives, wreck dives, sting ray city, computer dives. 1-800-821-6670 See ad pg 107
54. TROPICAL ADVENTURES 16 pages including hotel description and brochure plus a wealth of info on Cozumel Island. 1-800-247-3483 See ad pg 113
55. UNEXSO / RADISSON Exciting specialty dives, playful dolphins, shark feeding, mysterious wrecks. World class facility. 5 boats, 2 pools, certification courses, photo/video center, pro shop, restaurant. See ad pg 22
56. AMERICAN PRO DIVING CENTER See ad pg 20
57. ARUBA PALM RESORT / UNIQUE SPORTS Free color brochure of resorts. Also, dive brochure with package prices and dive sites. 1-800-345-2782 See ad pg 16
58. ARUBA TOURISM AUTHORITY See ad pg 16
59. BERMUDEA DEPARTMENT OF TOURISM See ad pg 25
60. BIRDS UNDERWATER See ad pg 20
61. BLUE GROTTTO See ad pg 20
62. BLUE WATER DIVERS See ad pg 25
63. BUDDY BEACH AND DIVE RESORT 1-800-359-0747 See ad pg 97
64. CAPTAIN DON'S HABITAT All will receive a 6-panel colored brochure of property with separate current rate sheet and any special promotions presently being offered by Captain Don's Habitat. 1-800-327-6709 See ad pg 97
65. CAYMAN ISLANDS DEPARTMENT OF TOURISM Elegant British Caribbean Island trip with crystal-clear waters, relaxing beaches, safe world-famous diving, fishing, and warm, hospitable people. For a free brochure, call 1-800-346-3313 See ad pg 27
66. DEVIL'S DEN See ad pg 20
67. DIVI RESORTS Air-conditioned guests and studios. Two freshwater pools and dive Bonaire's extensive fleet together with photo and video instruction. 1-800-367-3484 See ad pg 97
68. FANTASEA DIVING See ad pg 25
69. GINNIE SPRINGS DIVE CENTER Nine crystal clear springs. Basic thru cavern/cave certification. Full service dive shop. Camping. Send for information packet. See ad pg 20
70. LANDFALL PRODUCTIONS 1-800-525-3833 See ad pg 26
71. NAUTILUS DIVING / ADVENTURE WATER SPORTS See ad pg 25
72. S.E.A. SCUBA Aruba's only dual-rated, NAUI pro facility and PADI training center. Seaport Market, formerly Harbourtown location. Instruction, sales and service. Scubapro equipment, 40' dive boat. Packages available. 1-800-450-2084 See ad pg 16
73. SOUTHSIDE SCUBA See ad pg 25
74. ST. KITTS TOURISM OFFICE St. Kitts and Nevis dive operations offer instruction from resort courses to full certification, and can provide all the equipment you'll need, as well as roster of dives each day. 1-800-582-6208 See ad pg 26
75. SUNSET RESORTS From hotels on Bonaire's finest beaches, to deluxe oceanfront apartments, to an assortment of oceanfront self-contained private villas, to a comfortable, economy inn, call 1-800-344-4439 See ad pg 97
76. SUNSET RESORTS From hotels on Bonaire's finest beaches, to deluxe oceanfront apartments, to an assortment of oceanfront self-contained private villas, to a comfortable, economy inn, call 1-800-344-4439 See ad pg 97
77. VORTEX SPRINGS See ad pg 20
114. GO DIVING 1-800-328-5285 See ad pg 108
115. SOL CARIBE COZUMEL See ad pg 113
116. STELLA MARIS See ad pg 113

### MISCELLANEOUS

78. DIVERS SECURITY INSURANCE See ad pg 116

79. ENVISIONS LTD. Collectables and wearables for the diving enthusiast! Embossed leather or denim jackets, sweats / tees. Magic mug or tankard, brass car ornament. 1-800-724-3728 See ad pg 116
80. PEOPLE OF THE SEA 1-800-TWO-RING See ad pg 116
81. SUZUKI Vehicles designed for active lifestyles. Smart, reliable, dependable. Ask anyone who owns one. Suzuki Full Line Brochure. 1-800-447-4770 See ad pg 76

### PHOTOGRAPHY

82. AQUAVISIONS SYSTEMS See ad pg 106
83. SUBSEA VIDEO SYSTEMS See ad pg 116
84. UNDERWATER PHOTO - TECH Your complete u/v service center, which includes repairs of underwater camera systems, custom modifications, rentals, sales, and accessories. Makers of the famous body cap. See ad pg 116

### SPECIAL AD SECTION - AUSTRALIA

85. AUSTRALIAN RESORTS Experience the Great Barrier Reef up close and unspooled while diving the world famous Cod Hole, Lizard Island, Australia / USA at 1-800-922-5122 or Canada at 1-800-448-9400. See ad pg 72
86. SAFE LIMITS DIVE SYMPOSIUM Symposium Information Brochure, detailing Program Speakers plus Registration Information. October 21, 22, 23. 61-75-766-388 See ad pg 74
87. MIKE BALL DIVE EXPEDITIONS Australia's best dives. Expeditions suitable for the adventurous diver seeking big fish action, deep walk, shark action, or wreck dives at Great Barrier Reef and Coral Sea. 1-800-952-4319 See ad pg 73
88. TROPICAL ADVENTURES 16 pages including hotel description and brochure plus a wealth of info on Cozumel Island. 1-800-247-3483 See ad pg 74
89. SEA SAFARIS See ad pg 75
90. NIMROD III The Great Barrier Reef's most comfortable live-aboard experience. Trips to the Cod Hole, Ribbons Reef, and Extended Coral Sea Charters. Various charters to meet budget / schedule. 1-800-821-6670 See ad pg 75

### SPECIAL AD SECTION - HAWAII

91. AARON'S DIVE SHOP 1-800-262-2333 See ad pg 63
92. ALOHA DIVE SHOP Celebrating 25 years service to divers, students, rentals & retail sales. "We'd like to be your dive shop in Hawaii" Jackie James. 1-800-999-8444 See ad pg 63
93. AQUATIC ADVENTURES 1-800-204-4613 See ad pg 59
94. ATLANTIS REEF DIVERS All inquiries will receive a full-color brochure, price lists, information letters, discount coupons for all dive excursions 1-800-554-6267 See ad pg 56
95. DIVE & SEA CENTER 1-800-874-1952 See ad pg 60
96. ECOSCAPES DIVE & ADVENTURE OUTFITTERS Kona, Hawaii PADI 5-star IDC, Great Dive Packages, 43' Dive Boat, Mantas Dives, Lava Dives. 1-800-949-DIVE See ad pg 58
97. ED ROBINSON'S DIVING ADVENTURES Join us for the best dives of your life! Call for FREE comprehensive information and dive site packages with maps! 1-800-635-1273 See ad pg 61
98. FATHOM FIVE DIVERS Brochure, letter, and sheet describing why Fathom Five is the best dive company on Kauai 1-800-972-3078 See ad pg 56
99. HAWAIIAN DIVERS Technical and recreational diving in Kona, PADI and SSI instruction, deep dives, manta and whale dives. 1-800-356-7243 See ad pg 58
100. JACK'S DIVING LOCKER - Kailua-Kona, "Our friendly people make the difference." 2 boats, Manta Ray night dives. Lava tubes, exotic marine life, personalized service. PADI, NAUI, SSI. Since 1981. 1-800-345-4807 See ad pg 58
101. KOHALA DIVERS LTD. 1-800-882-7774 See ad pg 59
102. KONA COAST DIVERS Two charter boats, full retail and rentals, classroom, 100' reef, vacation packages. 1-800-HOA-DIVE See ad pg 56
103. LAHAINA DIVERS INC. Information package will include 4-color brochure showing boats and dive areas. Also included will be schedule and rates on charter and classes 1-800-998-3483 See ad pg 56
104. NITROX TROPICAL DIVERS / SUNRISE DIVING 1-800-AOS-DIVE See ad pg 59
105. PACIFIC DIVE 1-800-876-5334 See ad pg 60
106. RAINBOW DIVERS 1-800-982-6747 See ad pg 61
107. REEF WATCHERS A private scuba service for the discerning diver. Beach / boat dives. PADI instruction. 1-800-874-3467 See ad pg 60
108. SOUTH PACIFIC SCUBA Full color brochure describing daily boat dives, certification classes and other services. 1-800-95-SCUBA See ad pg 61
109. DIVE KAUAI SCUBA CENTER - Hotel / Dive Packages - Most specialty courses available. Custom dive / Boat dives. Charters to Niihau. 1-800-828-DIVE See ad pg 64
110. HAWAII VISITORS BUREAU 1-800-GO HAWAII See ad pg 57
111. HAWAIIAN REEF DIVERS Information on dive site, rentals, map of Maui. Showing dive and snorkel sites and beach facilities, etc. Hotel info. Car & Moped rental on site. 1-800-551-6767 See ad pg 64
112. OCEAN CONCEPTS 1-800-808-DIVE See ad pg 64
113. SEA PARADISE SCUBA Located in beautiful Keahou Bay, Kona, Hawaii. Specialists in cavern and lava tube dives, exploring exotic wonders of Hawaii. We're the leading charter for Kona's world famous Manta Ray Night Dives. 1-800-323-KONA See ad pg 64

## SUBJECT TO CHANGE

\*SEPTEMBER / OCTOBER 94 offer expires NOVEMBER 30, 1994



being eaten and nurture them to maturity—definitely a guy's job if you're a fish. As he tends a patch of bright red or purple eggs clustered on an exposed piece of rock or metal, the male sergeant major indicates he's on duty by turning a bluish color and swimming back and forth over the eggs, aggressively chasing any fish—or diver—that comes near.

The male jawfish keeps eggs in his mouth, occasionally spitting out the wad and rolling them for aeration. Seahorses use a brood pouch on their belly, ejecting hatchlings with spasmodic contractions—one of the few examples in the animal kingdom of males giving birth. And if you encounter an aggressive triggerfish while swimming across a sandy bottom, get the heck out of Dodge. You're probably close to his nest. Divers have lost fingertips to zealous triggers doing their job.

#### PROTECTING TERRITORY

A damselfish darting about in a confined area chasing off all intruders may also be protecting a carefully tended

patch of algae—its primary food source. Even nonfarming fish may fail to swim away when approached, indicating they're defending a territory. Often they will give a warning display, such as erected and spread fins or a color change. Some groupers and other fish produce sonic warnings by drumming their air bladders or grinding mouth parts to produce noise.

The gray reef shark arches its body into an S-curve, pulls its pectoral fins together and wags its head to serve notice that its space is being violated. If you value body parts, don't hang around to take pictures of this behavior.

#### PROTECTING LIFE AND LIMB

Like a cat arching its back and spreading its fur in a defensive display, a fish will try to make itself look bigger, more dangerous and harder to swallow. Notice how a squirrelfish raises its spiny dorsal fin as you approach. A pufferfish inflates its body with water to make itself too big to swallow. Emperor angelfish, before fleeing, make a loud grinding noise which is guaranteed to startle you.

If you watch fish around each other, you'll see some spreading their gill plates and opening their mouths. Their unspoken message is clear: "Back off!"

#### PUT 'EM UP: COMBAT

All of this competition for reproductive rights, food and territory often results, predictably, in combat. The fighting may be ritualized, as in harmless kissing displays, or may include locking jaws, biting, butting or other injurious acts. When you see open-mouthed grunts pressing their lips together, they're not smooching; they're competing for space. Parrotfish lock jaws while shaking each other back and forth, dueling over mating territory. Burrowing fish, such as sand tilefish, fight over burrows. Usually the dispute ends with one chasing the other out of the neighborhood at high speed. If two fish following each other have the same color pattern, especially wrasses and parrotfishes, chances are they're fighting.

#### CHOW DOWN: FEEDING

Many tropical reef fish are grazers. Par-



**SCUBA DIVING**

TANK TOPS  
STYLE #602

### TANK TOPS, T-SHIRTS & SWEATSHIRTS!!

Created exclusively for Rodale's Scuba Diving. This original hand-painted design is masterfully reproduced using a brilliant variety of color and texture to create vivid images of the underwater world.



T-SHIRTS  
STYLE #601

### T-SHIRTS & TANK TOPS:

Highest quality! 100% pre-shrunk combed cotton. sizes M, L, XL \$14.95, XXL (T's only) \$2.00 extra



SWEATSHIRTS  
STYLE #603

### SWEATSHIRTS:

Super thick, 90% pre-shrunk cotton. sizes M, L, XL \$29.95 XXL (add \$3.00) (\$3.50 S/H PER ITEM)

**FAST 7-10 DAY DELIVERY**

Order 24 hours / 7 days a week

**1-800-807-7746**

Have your Visa or Master Card ready.


**10% OFF EVERY ITEM AFTER THE FIRST!**

**CHECK or MONEY ORDER** mail to:  
The Duck Co., 4725 Nautilus Ct., Boulder, Co. 80301  
Make payable to the Duck Co./ On a piece of paper, print Name, Address & Daytime phone #. Specify size, garments, and quantities. Include \$3.50 S/H.


**RETAILERS CALL: (303) 530-9616 for volume prices.**

Plunge into a sea of aqua and sapphire. Descend through streams of tropical sunshine in our crystal clear waters. While below, the shallows reveal more than **twenty miles** of the most spectacular vertical walls in the Caribbean.

Submit to the exhilaration -- you're a guest of the **Riding Rock Inn.**




For twenty years this secluded resort has been dedicated exclusively to those who love to dive. When you combine Riding Rock's distinguished staff and over fifty dive sites with the finest food and accommodations, you'll have everything to make the perfect diving vacation.



**RIDING ROCK INN**  
San Salvador, Bahamas

**WORLD CLASS WALLS**



Wall-to-Wall Diving  
Without Wall-to-Wall People

**800-272-1492**  
(305) 359-8353



## COZUMEL ALL-INCLUSIVE



## DIAMOND HOTELS & RESORTS

Cozumel's newest total  
all-inclusive resort  
on San  
Francisco  
beach, 5  
minutes  
from  
Palancar  
Reef!

**\$599**



### All Inclusive Package Includes:

- 5 nights, village-style accommodations
- 3 days of two tank boat dives with **DIVE PALANCAR**
- Breakfast, lunch, dinner and late night snacks
- All non-motorized sports
- Tennis day/night/clinic
- All gratuities & taxes

(Some restrictions pp dbl. occupancy)

For reservations call...

 **Sea Safaris**

**1-800-821-6670**

310-546-2464 • Fax 310-545-1672

CIRCLE NO. 52 ON READER SERVICE CARD

rotfish, angelfish, butterflyfish, trunkfish and triggerfish stay close to the reef, looking for mollusks, worms, algae, small crustaceans, sponges and coral polyps. A parrotfish makes a grinding noise as it feeds on coral with its fused teeth (which form its parrot-like beak) to get at the algae growing on it. After grinding the coral rock and extracting the algae, the parrotfish expels sand—several tons of it a year.

Butterflyfish use their elongated snouts to probe nooks and crannies for tiny invertebrates or to reach into the coral calice and extract the living polyp. Blue tangs graze together, moving across the reef in herds, suddenly descending upon some patch of algae or eggs and overwhelming the defender's defenses.

**Hunters** include pursuers and sedentary deceptors. With their bullet bodies and forked tails, pursuers like jacks and snappers are built for the speed and endurance necessary to hunt successfully. Their actual predation is rarely observed by divers because it happens so quickly and occurs mainly at dawn and dusk when divers aren't usually in the water. Stalking, however, can be observed: Any fish moving at high speed, especially if making sudden course changes, may be hunting or escaping from a hunter.

A trumpetfish's stalking behavior is unique: It contours its long body to the profile of a larger fish and uses this concealment to sneak up on its prey. The frogfish is a classic sedentary hunter: While camouflaged, it dangles a lure from a long "pole" on its forehead. Small fish attempting to grab the bait are sucked into a cavernous mouth in a motion too fast for the human eye to see. The goatfish uses the barbels hanging from its mouth to sense animals in the sand, which it then digs for.

**Plankton feeders** like grunts, squirrelfish and cardinalfish often sleep during the day and move out into the current to slurp plankton at night. Their body shapes help them remain stationary even in strong current. Schooling fish such as chub and chromis that appear to be kissing the surface are likely feeding on plankton and detritus trapped at the air-water interface.

### PEEK-A-BOO: CAMOUFLAGE

Successful disguise is achieved by form and behavior. The trumpetfish poses its long slender body next to the swaying rods of a sea whip and thinks it has become invisible. The bars on sergeant majors, juvenile angels and triggerfish help them blend with the crazy-quilt patterns of the reef, which these slow-moving fish stay near. One function of a tropical fish's bright colors is to break up body symmetry and make the fish a more confusing target. Same for the fake eye-spots on damsels, angels, wrasses and butterflyfish, which can swim backward to fake a predator into attacking its less vital area. Predators such as sharks use counter-shading to confuse potential prey: a dark top helps it blend with the deep water below when viewed from above; the lower half is lighter to blend with a sunlit surface when seen from below.

Matching color to background is especially effective for bottom-dwelling fish. Scorpionfish, frogfish and flounder are best known for their ability to use skin cells filled with pigments of different colors to blend almost invisibly with their background. But octopi and cuttlefish can do the change fastest: less than two-thirds of a second.

**Concealment** works even better. Reefs and sand flats are full of hundreds of species that most divers will never see because they are hidden in a hole or buried in the sand. By training your eyes at a distance, you can see these creatures hide themselves as you approach. In sandy areas deeper than 50 feet, look for colonies of garden eels waving like charmed cobras in the current as they feed. They slowly withdraw as you approach. Razorfish let you get a bit closer then dive headfirst into the sand. Some fish such as stingrays and electric rays don't conceal themselves completely in the sand, leaving eyes and breath holes visible. Knowing this can result in a great photo and prevent you from getting injured.

### GET IT TOGETHER: SCHOOLING

Schooling is used by many animals, from antelopes to insects, to reduce the chance of (Continued on page 107)



## FLORIDA SPRINGS

(Continued from page 39)

cave certification."

"Yeah, I know," I say. "Have a nice dive."

If some cave divers cop a members-only attitude, it's well earned. These are the guys who have to retrieve the bodies of untrained divers who venture beyond visible light and their training, turn around after stirring up clouds of silt to find themselves staring at a wall of rock with no idea how to get out.

### Panhandle Panacea

.....

After avoiding the interstates for six days, we hop I-10 toward the second leg of our journey, the Panhandle. We motor halfway across, exiting at Ponce de Leon where the Fountain of Youth comes in two flavors: **Vortex** and **Morrison**.

One of the first commercial springs, Vortex is popular with divers and non-divers alike today. Swimmers, snorkelers, and rented paddleboats can some-

times crowd the spring, but no more so than the fish. (Vortex's sign: "Please Feed Your Eatable Food Scraps to the Fish.") Schools of 1- and 2-foot Japanese goldfish, grass carp and largemouth bass swim in the shallows waiting for eatable tidbits and posing for underwater photographers. Vortex is one of the fishiest springs in the state with blue gills, catfish and oceanic American shad that have traveled upstream hundreds of miles to spawn here.

A large, well-lit cavern is safe for open-water divers down to the cave entrance at 55 feet. At this point, a guideline leads through a garage-sized tunnel to 115 feet. At the cavern entrance, we discover two more of the spring's inhabitants. A school of mysterious shadow bass, which inexplicably prefer cave habitats to open water, hangs motionless at the cave entrance, heads pointed into the flow as if they were just enjoying the breeze. Slithering along the bottom of the cavern, avoiding divers' lights at all cost, are American eels, which are born in the Sargasso Sea and make the long journey into North America's

freshwaterways, only to return when nature calls.

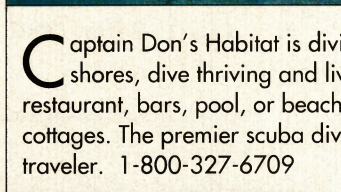
From Vortex, we take Highway 81 past the "Eddie's Ornamental Concrete" sign and attendant statuettes, and ramble down another dirt road to reach Morrison Springs, where primeval forest presses up to clear water's edge and the spring run empties into the scenic Choctawhatchee River, yet another photo waiting to be captured. A limestone cliff drops from the sandy spring basin to 50 feet. Morrison has two cavern entrances, neither of which can be penetrated beyond natural light, one at 30 feet and another at 50. A circular opening in the floor of the basin at 40 feet leads down to the second cavern entrance, but the gale-force flow from this hole makes it tough to get down there. Hand over hand, I make my way into the hole and wrap my arms around a conveniently placed fallen log. The flow blows my hair straight back and exhaled bubbles disappear behind me almost before they're out of my mouth. Now I know how the shadow bass feel. (Continued on page 108)

## The Best of Bonaire



**S**unset Beach Hotel... on Bonaire's finest beach with dive center, watersports and tennis courts. Casual beachside dining at the Sunset Terrace with daily all-you-can-eat BBQ Buffet. Rooms with two double beds or one king-size bed, A/C, fridge, safe, telephone and cable TV. Tel: 1-800-328-2288 (US and Canada), Fax: 407-682-6000, P.O. Box 333, Kralendijk, Bonaire, NA. 599-7-8291/8448

CIRCLE NO. 76 ON READER SERVICE CARD



**C**aptain Don's Habitat is diving...24 hours a day, 365 days a year. Just off our shores, dive thriving and lively reefs and wrecks. Relax and enjoy our oceanfront restaurant, bars, pool, or beach. Your choice of oceanfront villas, jr. suites or cottages. The premier scuba diving resort for the novice to the most experienced dive traveler. 1-800-327-6709

CIRCLE NO. 64 ON READER SERVICE CARD



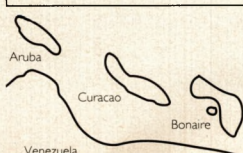
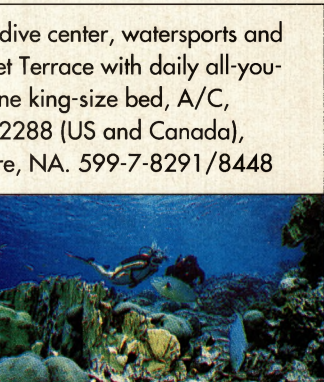
**B**uddy Beach and Dive Resort is a brand new luxury accommodation at seaside with a beautiful reef right in front of Buddy's. Excellent for dive groups and individuals with very good prices. Personalized services, where you are not just a number. Own car rental on site. 1-800-359-0747 / 1-800-786-DIVE.

CIRCLE NO. 63 ON READER SERVICE CARD



**D**ivi Flamingo Beach Resort & Casino offers air-conditioned guest rooms and studios, two freshwater pools, a lighted tennis court and excellent seaside dining. Peter Hughes Dive Bonaire has a versatile fleet of dive boats, underwater photo and video instruction and 24 hour film processing. For information, rates and reservations: Divi Hotels Inc., 2401 N.W. 34 Ave., Miami, FL 33142. Tel: 800-367-3484 / Fax: 305-633-1621.

CIRCLE NO. 67 ON READER SERVICE CARD



**Bonaire**  
DUTCH CARIBBEAN  
AIR ARUBA FROM NEWARK; ALM FROM MIAMI AND ATLANTA

For information  
call 1-800-U-BONAIRE

discover hidden pleasures



# DAN

DIVERS

ALERT

NETWORK

## DOWN TO THE WATERLINE

**B**y now, most divers are aware that they need to replace the water their bodies lose while diving. If you don't replace as much as you lose, you get dehydrated, a condition which is common to divers. But how important is dehydration? What should be done about it? There's plenty of "information" floating around about how to avoid dehydration, but not all of it is scientifically accurate. How important is water to diving health? What about the rumors that sports drinks should be diluted or that they further dehydrate divers? Read on.

### DON'T DIVE DRY

Dehydration reduces your tolerance to exercise and heat. For the same amount of exercise, your body temperature rises higher when you are dehydrated. This may cause you to overheat, feel faint and be unable to carry your gear around easily or even finish a dive safely. Your body would rather cut your level of exertion than let you continue to generate heat—and lose more water—through exercise. Dehydration is also a small factor in reduced tolerance to cold. Another reason to avoid dehydration on dive trips is that after a dive it may be difficult to distinguish the headache and general malaise of dehydration from some forms of decompression sickness. You can easily avoid dehydration by drinking. Make fluid replacement a priority on all your dives.

### GOOD SPORTS

Water is a good, inexpensive fluid replacer. For ordinary, short-duration activities, your regular meals will replace the other things you tend to lose, such as certain minerals and salts called electrolytes.

However, if you drink only water your body helpfully responds by having you "pee" out the water, as there are not enough electrolytes to help absorb and "hold" the water. Because they were designed for people doing vigorous exercise, sports drinks such as Gatorade con-

tain some of these electrolytes.

Exercise studies show that sports drinks promote rehydration by helping you absorb and retain water. They stimulate your thirst mechanism to keep you drinking, and replace needed water. The net effect is more, not less fluid.

### MYTH ONE: ELECTROLYTE OVERLOAD

A persistent rumor among divers is that sports drinks and juices overload you with electrolytes.

There is no scientific basis for this.

One cup of cream of mushroom soup has up to 1,000 mg of sodium. A cup of Gatorade has less than 110 mg of sodium—less than a slice of whole wheat bread or a glass of milk.

What about high concentration foods and juices? Your body can

handle it. The body continually makes adjustments to keep the balance of its chemicals within a pretty narrow range. It restricts electrolyte loss when supply is low and works to get rid of the excess when you take in too much.

Most people in Western countries eat many times more salt than their bodies need. Ordinarily, the body handles large excesses, though there are exceptions, such as people who are overly sensitive to sodium.

Contrary to popular thought, human blood and seawater do not have similar concentrations of these salts. In fact, seawater has several times more electrolytes than your body fluids. If you were to drink a lot of seawater, your body would have to get rid of the excess salt. To do this, your kidneys would draw water

*There are  
as many myths  
about proper  
hydration as  
there are  
about DCS.  
Here's the real  
story.*

FRATELLI STUDIO



from your body's supply to dilute the salt. This would be so dehydrating that you could die of dehydration faster by drinking seawater than by not drinking at all.

## MYTH TWO: SALTY DRINKS DEHYDRATE

Another myth is that salty drinks will dehydrate you.

First is the scientific-sounding but false statement that salty drinks pull water from the body into the intestine to exactly balance the amount of salt and other electrolytes in a highly-concentrated—or hypertonic—solution. Sports drinks are not hypertonic to your body fluids. In fact, they are isotonic—or similar to your body fluids in their concentration of electrolytes.

In addition, your body maintains a 1.3-gallon to 2.6-gallon circulating reserve of water, salivary, gastric, biliary, pancreatic and intestinal fluids that mix with, change the chemical attributes of, and dilute what you eat and drink.

Numerous studies of people exercising in heat show that people prefer the taste of salty drinks and, as a result, drink more. The small amount of salt in these drinks helps retain water and further stimulates your thirst to keep you drinking. The net effect is that you gain, not lose, fluids.

## MYTH THREE: SWEET DRINKS DEHYDRATE

Statements that drinks with a high sugar content pull water out of the body into the intestine can also be put to rest.

It's a physiological principle that fluids are drawn across certain body membranes into other fluid compartments with higher particle amounts. This is called osmosis. However, it doesn't apply to sweet things in your intestine. Sugar is not osmotically active in your intestine; in other words, it's unable to draw water out of your body and into the gut.

Sports drinks, however, are usually only 6 percent to 10 percent sugar and they are not injected into the vein. The sugar allows more absorption of water than a solution of salt and water alone. In other words, the sugar aids water absorption. The sugar in sports drinks is also absorbed by your cells, allowing them to draw water through their membranes along with the sugar.

The net effect is that you get more fluid, not less.

## MYTH THREE: SALTY FOODS DEHYDRATE

Eating salty food, within limits, will also not dehydrate you. Salt is well known to help you retain water. Extra salt stimulates a type of thirst called osmotic thirst, which is different from "hypovolemic" thirst when you are low on water. It then

makes you retain the water you drink with meals. Some "salt-sensitive" people with high blood pressure are told to restrict salt to allow them to lose the extra water the salt retains.

Then, too, don't forget that you have a kidney, usually two. As described above, fluctuating electrolyte intake is evened out by the body. There are many physiologic processes involved in fluid balance, not just passive fluid movement across



**AKONA®**  
ADVENTURE GEAR

Experience  
the evolution  
of a new species.

 AKONA ADVENTURE GEAR P.O. 14805, North Palm Beach, Florida 33408



**THE GREAT ESCAPE**

ESCAPE TO A TROPICAL PARADISE SO SECLUDED, SO PRIVATE, SO ULTIMATELY AWAY THAT NO ROADS LEAD THERE. ESCAPE TO A SPANISH VILLA RESORT WITH WORLD-CLASS SCUBA DIVING, BONE FISHING, FRESH WATER SWIMMING POOL, TENNIS AND HIKING TRAILS. AN ISLAND OF INCOMPARABLE NATURAL BEAUTY TO EXPLORE. ESCAPE TO POSADA DEL SOL - THE WONDER'S ALWAYS THERE.

**POSADA DEL SOL**

1-800-642-3483 ·  
GUANAJA, BAY ISLANDS

1201 US HIGHWAY ONE, SUITE 210 · N PALM BEACH, FL 33408 · 407-624-3483

CIRCLE NO. 44 ON READER SERVICE CARD



membranes according to their gradients.

#### MYTH FOUR: NOT AN UPSET

It has been said that sports drinks contribute to stomach upset. Although it's hard to tell in every case, studies of marathon runners reveal that the usual culprits in gastrointestinal upset are high core temperature, dehydration and decreased sweating that accompanies high levels of dehydration—not the intake of sports drinks.

Dr. Carl Gisolfi, one of the best-known researchers of fluid regulation in the heat, confirmed that juices do not have a dehydrating effect. He then mentioned that drinking large quantities of some juices just before heavy exercise may delay stomach emptying due to the high carbohydrate content, or may cause stomach upset, making these juices unsuitable as sports drinks; however, they have no dehydrating effect unless they give you diarrhea.

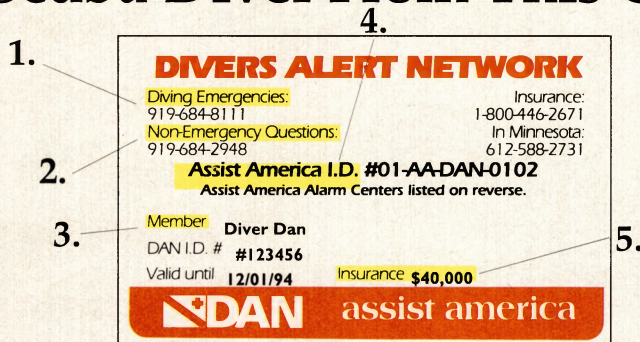
#### MYTH FIVE: DILUTE SPORTS DRINKS

A popular misconception among divers is that sport drinks must be diluted or taken in small quantities. Dr. Robert Murray, director of the Gatorade Exercise Physiology Laboratory, points out that diluting the drinks lessens their effectiveness. The drinks are also designed to be taken in large volumes for rehydration. Since diving is rarely a maximal athletic endurance event, if you don't like the taste full strength, it makes little difference to dilute. The importance is to replace fluids and electrolytes during long exercise.

#### WHAT SHOULD DIVERS DO?

Good hydration benefits diving health. Bring plenty to drink to dive sites and dive boats. Drink throughout your dive trips. Which drink you choose is a matter of personal taste as long as you don't overdo caffeine. After a one-hour dive you don't ordinarily need to immediately replace electrolytes. It's also unnecessary to take extra electrolytes ahead of time to offset any loss predicted during the dive. You don't lose enough to affect performance or fatigue level. However, if you like sport drinks and they are your preferred method of hydration, then enjoy yourself. Just as emergency oxygen is becoming required dive equipment, large drink coolers should become part of all dive trips, and standard issue aboard dive boats.

## You Can Tell A Lot About A Scuba Diver From This Card.



1. **Cares about diving health and safety**—Established at Duke University Medical Center in 1980, DAN operates a 24-hour emergency medical hotline to assist both injured divers and the medical personnel caring for them. This service is supported by DAN membership dues. Your DAN membership helps not only you, but fellow divers as well.

2. **Recognizes the value of expert information**—DAN membership dues also support a diving medical information telephone line that provides expert answers to questions about health and fitness for diving. Divers, instructors and physicians can find out whether specific medications and conditions are compatible with diving—as well as other important information—immediately.

3. **Keeps good company**—More than 100,000 scuba divers are DAN members, from new divers to seasoned professionals. Sharing an interest in adventure, love of the water and the safe pursuit of both, DAN members receive valuable benefits, including Assist America coverage (see below), the DAN Underwater Diving Accident Manual and a subscription to Alert Diver magazine, DAN's bimonthly journal of diving safety and health.

4. **Doesn't want to get stuck anywhere**—DAN membership includes free Assist America coverage, an exclusive DAN benefit. As a DAN member, you're guaranteed free medical air evacuation from anywhere outside a 100-mile radius from your home. Any illness or injury, diving-related or not, incurred during non-business travel is covered by Assist America. If you travel, Assist America is worth the DAN membership fee alone.

5. **Personally and financially responsible**—DAN membership is only \$25 a year. For an additional \$25, you can get \$40,000 insurance coverage for all in-water (diving and snorkeling) injuries. Though rare, diving injuries can be expensive to treat and are usually not covered by regular medical insurance. Not only a great value, DAN insurance also supports other DAN services, including diving medical and safety research.

For more information, call (919)684-2948, ext. 333

To join DAN, call (800)446-2671.

**DAN...Divers Helping Divers. Join Today.**



**DAN**

Box 3823  
Duke University Medical Center  
Durham, NC 27710

Divers Alert Network (DAN) is an international tax-exempt nonprofit member-supported diving safety organization based at Duke University Medical Center in Durham, N.C. Since 1980, DAN's primary mission has been to help make diving safe for recreational scuba divers. It accomplishes this goal by providing medical consultations for injured divers, by collecting and analyzing diving accident and fatality information, by promoting educational programs, and by offering diving accident insurance and worldwide medical evacuation coverage. DAN is supported in these endeavors by a network of diving medical experts, hyperbaric facilities, instructors, stores, training agencies, clubs and manufacturers.



CIRCLE NO. 1 ON READER SERVICE CARD



## ASK A MARINE BIOLOGIST



# BURNING CURIOSITY

BY LOWELL P. THOMAS

**Q:** *I have a small plywood dive boat that I built myself. The boat is stored under a tarp behind my house and I always dry out the bilge with a sponge before covering it. I use a sponge called "yellow sponge" that local sponge fishermen bring up from the shallow rocky bottoms here. They last for years when they are cured and washed.*

*I decided to get a new sponge for my boat last week and I found some brown ones about 10 feet down that seemed similar but a lot softer. I thought one of them would make a good boat sponge so I squeezed them trying to decide which one to take. Suddenly, my hands started to burn. I barely got back to the boat when the palms of my hands began to burn so badly I thought I'd pass out. I've had some painful experiences but this was something else. I just hung onto the rail and gritted my teeth for about 15 minutes. Finally I was able to climb into*

*the boat, but the palms of my hands were red for a couple of hours and the pain lasted all afternoon. The skin peeled off my palms for two weeks. Did the sponges sting me, or was it something living on them?*

W.K.R., MIAMI

**A:** It sounds like you tangled with a stinging sponge called *Neofibularia nolitangere*. The specific name, *nolitangere*, means "do not touch," and for good reason. This sponge produces an immediate, severe sting which often lasts for several hours. Some people are more sensitive than others and medical attention may be required. My own experience with *Neofibularia* 15 years ago was much like yours. The palms of my

hands turned bright red and the pain was truly amazing. Unfortunately, this is a nondescript brown-colored sponge that looks a lot like other sponges. How else can I explain that a few weeks after my first encounter I inadvertently tangled with another *Neofibularia* and got stung again.



HAL MAYFORTH

# DIVE DIVE DIVE

Resort<sup>™</sup>

**FALL  
Special**  
**1 1/2**  
PRICE\*

**NEW**  
Shark Speciality Course!

**FREE**

Intro to Nitrox Course  
Call for Details

**NEW**

Completely remodeled  
private villas sleeps up  
to four with comfort!

**The BEST**

Shark Alley, Fishbowl,  
James Bond Wreck, the  
WALL at the tongue of  
the ocean, Blue Hole  
diving and exotic island  
cultures are just a  
phone call away...

**The First International  
Nitrox Center in the  
Bahamas**

ANDI • IANTO • NASOS • NAUI  
• PADI • SSI FACILITY

**800-368-3483**  
fax 305-943-5002

We couldn't improve on what nature  
has brought to the Bahamas... clear,  
warm, exotic waters teeming with  
color and life, so we did the next best  
thing, we're improving the price.

Reserve your dive vacation for this  
fall and **bring a friend for half price.**  
Call now and we'll send you all the  
details.

# NASSAU Bahamas

\*Promotion in effect  
from 9/22/94 to  
12/16/94 excluding  
holidays.



CIRCLE NO. 26 ON READER SERVICE CARD



**A Green  
Season Special  
for you.  
Now!**

**WALK THE DEEP BLUE**

*In the Green Season  
the Diving's Never Better*

CALL YOUR  
TRAVEL AGENT OR  
PHONE 1-800-343-6332



COSTA RICA NATURE'S MUSEUM



CIRCLE NO. 25 ON READER SERVICE CARD

Private, elegant  
accommodations  
for four with increased  
occupancy to six for  
acquainted group.

- Personable
- all inclusive
- live-aboard

**One week**  
Dive • Fish •  
Cruise Itinerary

# HOT DIVE BELIZE

**\$1595** per person/per week\*

**\$1195** Increased Occupancy

## Master Stateroom

1 Queen Bed  
Private Head and  
Shower

## Deluxe Stateroom

1 Queen Bed (Lower)  
1 Twin Bed (Upper/ Fold Down)  
Private Head and Shower

## Salon Sofa Bed

Shared Head and Shower

\*based on double occupancy  
minimum of 4 persons



- Unlimited Diving
- Sport Fishing
- Snorkeling

## Cruise and Visit Remote Romantic Cayes

- Blue Hole
- Turneffe Islands
- Lighthouse Reef
- Glovers Atoll
- Southern Barrier



**1-800-HOT-DIVE**

CIRCLE NO. 36 ON READER SERVICE CARD

102 • RODALE'S SCUBA DIVING

In general, it's not a good idea to handle sponges. Many species can cause swelling and pain or itching. Even some species which produce no immediate effect can cause severe reactions if they are handled frequently. Some of the green and red tube sponges of the genus *Haliclona* have been reported to cause *serious* delayed reactions in some people. The bright-red fire sponge, *Tedania ignis*, punished more of my students than any other, but they still could never resist touching this beautiful scarlet booby trap.

Many sponges have tiny needles of silica throughout their bodies. They also may incorporate sand and other materials. It's only the commercially important species whose skeletons are solely of soft, pliable spongin fibers. The collection of commercial sponges, however, is regulated by law.

Also, much of the shallow marine environment south of Miami falls under the protection of a national marine sanctuary. Be very careful that any "collection" of marine life you do is legal and that it will not prevent others from enjoying the environment. Often it's illegal—and at the very least destructive—to remove attached creatures from the seafloor. If you want a record of the life you see, make sketches and take notes and photographs. Your diving notebook and photos will last forever.

**Q:** *Each summer my brother and I scuba dive along the west coast of Sweden just north of Gothenburg. Last year we were in a small "vik" near Fiskebäckskil when we noticed large areas of pinkish water. Over several hours these patches became larger and larger until the entire vik was pink to a depth of 1 meter. The pink water was quite slimy and had the smell of fresh potatoes. Local fishermen told us this pink water occurs every few years and was caused by microscopic plants in the water. Can you tell us what causes this slimy pink water and how it happens so rapidly?*

A.J., LONDON

**A:** You saw a "bloom" of phytoplankton, probably a species of dinoflagel-



# HERE'S YOUR BIG CHANCE TO WIN!

Give a Rodale's SCUBA DIVING Gift Subscription this Christmas—and try your luck at our giant

\$250,000.00  
Grand Prize!

(Pssst! Circle the middle star on your Entry Certificate, and if you're our winner, we'll add \$50,000.00 to your Grand Prize—for a total of \$300,000.00!)

Rodale's  
**SCUBA DIVING**®

## Grand Prize Entry Certificate

YOU MAY WIN \$250,000.00 OR MORE,  
BUT YOU MUST ENTER TO QUALIFY!



(See our page advertisement for the secret of these five stars.)

**YES.** . . please enter me in your publisher's giant \$500,000.00 Sweepstakes! Also, enter a one-year (10 issues) gift subscription to Rodale's SCUBA DIVING for the person listed below and send each of us a free copy of your 1995 Dive Activity Calendar. Bill me after January 1, 1995, at the low holiday rate of \$13.97.

WKNB10

**Send Gift To:**

Name (First) (Last)  
Address Apt. #  
City State Zip  
**Bill Me:**

Name (First) (Last)  
Address Apt. #  
City State Zip  
☐ Please start or renew my own subscription at the one-year rate of \$15.97.  
Canadian Price: CDN \$21.97 (includes 7% GST) Printed in USA

Rodale's  
**SCUBA DIVING**®

## Grand Prize Entry Certificate

YOU MAY WIN \$250,000.00 OR MORE,  
BUT YOU MUST ENTER TO QUALIFY!



(See our page advertisement for the secret of these five stars.)

**YES.** . . please enter me in your publisher's giant \$500,000.00 Sweepstakes! Also, enter a one-year (10 issues) gift subscription to Rodale's SCUBA DIVING for the person listed below and send each of us a free copy of your 1995 Dive Activity Calendar. Bill me after January 1, 1995, at the low holiday rate of \$13.97.

WKNB10

**Send Gift To:**

Name (First) (Last)  
Address Apt. #  
City State Zip  
**Bill Me:**

Name (First) (Last)  
Address Apt. #  
City State Zip  
☐ Please start or renew my own subscription at the one-year rate of \$15.97.  
Canadian Price: CDN \$21.97 (includes 7% GST)



PLACE  
STAMP  
HERE

CHECK ONE AND MAIL TODAY

- ☐ Christmas gift, order and Sweepstakes entry.  
☐ Sweepstakes entry only.

**Rodale's SCUBA DIVING**

P.O. BOX 7578

RED OAK IA 51591-0578

PLACE  
STAMP  
HERE

CHECK ONE AND MAIL TODAY

- ☐ Christmas gift, order and Sweepstakes entry.  
☐ Sweepstakes entry only.

**Rodale's SCUBA DIVING**

P.O. BOX 7578

RED OAK IA 51591-0578

RODALE PRESS

# \$500,000.00 SWEEPSTAKES

(HERE'S HOW THE OFFER WORKS)

*No Purchase Necessary*

To enter, follow the directions published. Entries must be received no later than May 31, 1995. No responsibility is assumed for lost, late, misdirected or undelivered mail.

Sweepstakes open to all residents of the United States and Canada, except those residing in the Commonwealth of Puerto Rico, and is subject to all applicable laws and regulations and is void wherever prohibited by law.

NO PURCHASE NECESSARY. To enter the Sweepstakes without ordering, DO NOT USE THESE CARDS. Write your name and address on a postcard and mail to: Rodale Press \$500,000.00 Sweepstakes, P.O. Box 7578, Red Oak, IA 51591-0578. Sweepstakes entries must be received by May 31, 1995. Offer open to residents of U.S. (except Puerto Rico) and Canada.

For complete rules, send a separate stamped, self-addressed envelope to: Rodale Press \$500,000.00 Sweepstakes Rules, P.O. Box 7316, Red Oak, IA 51591-0316.



Give a Holiday Gift Subscription to

Rodale's

# SCUBA DIVING®

& GET A CHANCE TO WIN IN THE GIANT

RODALE PRESS

**\$500,000.00**  
**SWEEPSTAKES!**

The publisher of Rodale's SCUBA DIVING is giving away more than \$500,000.00 in cash and fabulous prizes to some lucky readers . . . and one of them could be you!

That's right! We're giving our valued readers a chance to win fantastic prizes and, at the same time, give a holiday gift of Rodale's SCUBA DIVING to a friend or relative.

Just fill out and mail in one of the attached Grand Prize Entry Certificates.

You may be the lucky winner of the \$250,000.00 cash annuity or some other terrific prize! No purchase is necessary to win.

HERE'S HOW YOU MAY WIN AN EXTRA \$50,000.00—\$300,000.00 IN ALL!

Find the five stars on one of the attached Entry Certificates and draw a circle around the middle one. That's all there is to it! And think of all the wonderful things you could do with all that money!

➤ **MORE PRIZES UP FOR GRABS!**

Mail your \$250,000.00  
Grand Prize Entry  
Certificate right away . . .

and you'll automatically be eligible for additional prizes!

- \* 16-day vacation get-away to Australia and New Zealand—with all expenses paid. It's a vacation of a lifetime!
- \* JEEP GRAND CHEROKEE LTD. PLUS \$20,000.00 CASH!
- \* State-of-the-art JVC audio/video system—valued at \$5,000.00.
- \* AND MORE! Over 4,500 prizes in all—GUARANTEED to be given away!

## Free Bonus Gift!

A FREE copy of Rodale's SCUBA DIVING 1995 Dive Activity Calendar

will automatically be sent to you and a special friend with your gift subscription.

Every month, this calendar brings you a spectacular underwater color photo, plenty of room to jot down notes, appointments, the number of days until your next dive vacation—PLUS listings of dive activities, events and celebrations around the world!



If Entry Certificate cards are missing, send your sweepstakes entry and/or gift subscription instructions to Rodale's SCUBA DIVING, P.O. Box 7578, Red Oak, IA 51591-0578. New gift subscriptions are only \$13.97 in the U.S., CDN \$21.97 (including 7% GST) in Canada. See attached card for sweepstakes rules. Void where prohibited.

UB20443

**Don't wait—return your Grand Prize Entry Certificate today!**



# APPLE VACATIONS



**ROUND-TRIP AIR  
7 NIGHTS HOTEL  
TRANSFERS  
5 DAYS DIVING**

## COZUMEL

**Fiesta Inn \$744  
Dive Paradise**

**Plaza Las Glorias \$814  
Aqua Safari**

**Fiesta Americana \$824  
Dive House**

**Diamond Resort \$1,189  
Dive Palancar**

## CAYMAN

**Sleep Inn \$1,079  
Parrots Landing**

**7 Mile Beach \$1,064  
Bob Soto's**

**Radisson \$1,189  
Don Foster's**

**Holiday Inn \$1,284  
Bob Soto's**

### Apple Gateways Include:

New York, Philly, Cincinnati,  
Cleveland, Chicago, Detroit,  
Hartford, Baltimore,  
Washington, New Orleans,  
Milwaukee, Los Angeles, San  
Diego

**CALL  
1-800-433-0885**

Prices are per person based on Chicago departure, between Aug 22 and Oct 7, 1994, dbl. occupancy including round-trip air fare on charter or scheduled airlines, hotel, transfers, diving (two tanks per diving day), and more. Departure and Immigration taxes not included. Prices subject to availability and vary by departure date, city of origin, duration, hotel, and dive operator. See the Fair Trade Contract in the current Apple Vacations brochure for complete details.

CIRCLE NO. 29 ON READER SERVICE CARD

late in the genus *Noctiluca*, which consists of a single cell about a millimeter (about one-twenty-fifth of an inch) in diameter. Millions of these tiny creatures reproducing rapidly can cause enormous concentrations called blooms.

Unlike most dinoflagellates, the species *Noctiluca* lack chlorophyll, and cannot manufacture their own food through photosynthesis but instead feed on living prey—other planktonic organisms. When *Noctiluca* blooms, conditions must be exactly right. The cold-temperate waters you dive in are relatively rich in nutrients such as nitrate and phosphorus. In the upper, sunlit layer of water, however, microscopic plants use up much of the available nutrient minerals as fast as the nutrients move up from deeper water. Occasionally, when the proper amount of sunlight coincides with “perfect” wind and water movements, growth of planktonic plants becomes extremely rapid. At such times, *Noctiluca* has all the food it can eat, and will reproduce quickly. It can literally fill the surface waters of the small harbors along the coast. Farther offshore it forms long streaks of reddish or pinkish water. Because *Noctiluca* luminesces, it may produce spectacular displays at night. Swimming fish leave long blue-green swaths of light, and individual *Noctiluca* cells flash and blink as they are disturbed by other planktonic creatures. Within hours, or at most a day or so, the bloom ends and the waters are restored to their normal state.

Because such special conditions are required for a *Noctiluca* bloom, they are rare, usually occurring only every seven to 10 years in Swedish west coast waters. *Noctiluca* is a common cause of bright sparks of light in the surface waters at night, but it rarely finds enough food to allow it to bloom as it does along the Swedish west coast.

*Dr. Lowell Thomas is a former professor at the Rosenstiel School of Marine and Atmospheric Sciences at the University of Miami.*

# SCUBA DIVING SEA&SEA

## '94 PHOTO CONTEST

Stock up on film and dust off your favorite lens, it's time again for the Rodale's *Scuba Diving/Sea & Sea* underwater photo contest. The weather is warm and last year's winners are enjoying their photo gear and dive vacations. We've got more great prizes on tap for the third annual contest.

**Send us your best photos in the following categories:**

**Saltwater Color • Freshwater Color  
Abstract Color • Black & White  
Macro • Marine Life  
Diver Portrait • Wrecks**

Mark each photograph with your name, telephone number, the location where the photo was taken and the equipment and film used to take the photo. (Attach slides to 8 1/2" x 11" paper if needed, and—please—write legibly.) All entries must be postmarked no later than Dec. 31, 1994. You may enter as many photographs as you wish and you may submit either prints or slides, but remember, **THE ENTRIES CANNOT BE RETURNED**. Duplicate slides gleefully accepted. Winners will be showcased in a spring 1995 issue of Rodale's *Scuba Diving*.

### SEND ENTRIES TO:

**Rodale's Scuba Diving/  
Sea & Sea Contest  
6600 Abercorn St., Suite 208  
Savannah, GA 31405**



Q & A: UNDER PRESSURE



# SCHOOL OF HARD KNOCKS

BY JON HARDY

**Q:** *I take great joy in scuba diving, but suffer from a painful ongoing problem. When I dive, my tank valve hits me in the back of the head. Being a woman of less than average height seems to exaggerate this problem, as my taller male dive buddies don't experience it nor seem to understand my situation. What can I do to make diving less painful and more enjoyable?*

**A:** You are not alone with this problem. In fact, many divers—even average-sized males—have this same discomfort but choose not to seek a solution. They put up with this head banging needlessly, not knowing it could easily be remedied by considering five factors and adjusting dive equipment accordingly.

Head banging results from a combination of tank size, valve height, regulator configuration, BC design and your size as a diver. Unless you're a growing teenager, your size is relatively constant. Let's look at what can be done with the sizing and assembly of your dive gear to help alleviate this problem.

## SURVIVAL OF THE FITTEST

The days of one-size-fits-all are gone—dive gear manufacturers have to accommodate a wide variety of diver heights and builds—so it's no longer necessary to put up with ill-fitting equipment. It's also important for avid divers to consider buying their own gear to guarantee comfort during every dive. Many people don't realize how important BC fit, sizing and buoyant lift are to proper overall performance as a diver, as well as being a source of the head-banging problem. A diver needs a BC that provides adequate buoyant lift and no more, fits properly and isn't oversized, as is often the case. A BC

that's too large tends to float forward and upward while under water, greatly intensifying the head-banging problem. Make sure that your BC fits correctly and that all releases are properly adjusted for comfort in the water. The weight

of the tank out of the water will dramatically change the way the BC fits and feels.

## GET IT TOGETHER

When attaching the BC to the tank, try sliding the fastening straps toward the "shoulders" of the tank. When you wear the BC, the tank valve will be lower on your back and away from



CAMERON EAGLE

**DIVE  
TOURS**

**ALL  
MEALS  
DRINKS  
PLAY  
DIVING**

**DIAMOND®**

**dive  
palancar**

**ALL  
COZUMEL**

**3 NIGHTS FOR  
\$385**

**AIR ADD ON FROM  
EAST COAST & TEXAS**

**\$299**

**CALL  
(800)  
433-0885**

(Prices, inclusions & tour elements subject to change without notice.)

CIRCLE NO. 28 ON READER SERVICE CARD

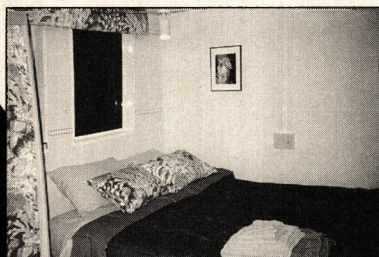


# WHY ROUGH IT ?!



## The Nekton Pilot Offers:

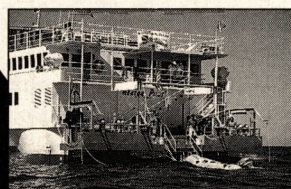
- Super Stable SWATH Design
- Large Cabins with Full Private Baths
- Picture Windows in Every Cabin
- 2,000 sq. foot Sundeck with Jacuzzi
- Elevating Dive Platform
- Photo and Video Facilities
- Fabulous, Remote Bahamas Diving
- All at a Very Competitive Cost!



## NEKTON DIVING CRUISES (800)U/W WORLD

(800)899-6753 • (305)463-9324

Patent 5,140,924 Ship's Registry U.S.



CIRCLE NO. 40 ON READER SERVICE CARD

# Aquatica 90

THE SYSTEM THAT MOVES SLR UNDERWATER PHOTOGRAPHY INTO THE 21ST CENTURY.

- The world's only computerized camera housing.
- Ergonomically positioned keypad.
- Controls over 12 camera functions.
- Access to six additional functions with MF-26 Data Back.
- Set and recall three custom programs
- Remote control capabilities (underwater/on land).
- Easy to access auto focus mode (MSC).
- Easy to read backlit LCD screen.
- Choice of seven languages.
- Full frame viewing through specially designed optical system.
- Mechanical controls for focus/zoom and aperture.

Available for  
immediate  
delivery

TLC®  
Arms

## AQUATICA®

The choice of the world's most famous photographers

"Aqua Vision camera housings—precision-built, rugged—a true professional tool. There is none finer."

—Chris Newbert

"Without Aqua Vision housings the pictures in Light in the Sea and Pacific would not have been possible."

—David Doubilet



A90  
For Nikon®  
N90/F90



## AQUA VISION SYSTEMS INC.

7730 Trans-Canada Hwy. • Montreal (Quebec) H4T 1A5 • (514) 737-9481 • Fax (514) 737-7685

CIRCLE NO. 82 ON READER SERVICE CARD

your head. This adjustment is particularly easy with hard-pack BCs since they normally have a greater range of vertical adjustment than soft-pack BCs. If you have a soft-pack and use all the ideas presented here and it still doesn't solve this problem, you might consider switching to a hard pack.

## TANKS A LOT

Another way of reducing head banging is to use a low-profile tank valve or a shorter tank. Since adjusting the BC pack higher on the tank will make the bottom of the tank hang lower on your body, short divers should also consider using shorter tanks for greater comfort. Gear manufacturers have increased diver choices with a wide array of tank sizes, pressures and volumes that are now on the market. You may, however, be limited by the selection of tanks offered by an operator.

## REGULATING COMFORT

If your regulator has a swivel on the first stage for low-pressure hoses—as about half do—you may be in luck. These regulators can be mounted to the tank valve with the swivel pointing down to reduce the overall height of the set-up by 1 or 2 inches, depending on the regulator. It really doesn't matter which way the regulator's mounted, and the hoses will swivel and function properly either up or down.

You don't need to go on banging your head and putting up with discomfort. With a few adjustments, diving will become more comfortable and enjoyable and your head-banging headaches will be eliminated.

Jon Hardy is RSD's ScubaLab™ test supervisor and products editor.

## FIRE AWAY

Rodale's Scuba Diving encourages everyone to send in questions, comments or problems related to diving to:

UNDER PRESSURE Q&A  
c/o Rodale's Scuba Diving  
6600 Abercorn St., Suite 208  
Savannah, GA 31405

If we use your question, we'll send you a Rodale's Scuba Diving T-shirt, so be sure to include your name and address.



# QUABBIN DIVES THE CAYMAN ISLANDS' QUINTESSENTIAL DIVE EXPERIENCE

Now in our 14th year serving divers in Cayman, Quabbin knows what you expect when you travel to the crystal warm waters of the Cayman Islands...

- Free hotel/condo pick-up and drop-off
- Free shore dives with packages
- 1 diver free with every 10 paid
  - Full rental program
  - Family certification and discounts
  - Computers welcome and available

Wreck dives, wall dives, reef dives, night dives, photo dives, Stingray City.

Grand Cayman, Cayman Brac, Little Cayman

It's all up to you.

Tell us what you want, and we'll tailor your dives accordingly. Four fully equipped, comfortable boats (36' to 50') ready to take you where the diving is just what you've been looking for.

Hotel packages from  
\$469 (pp/double)

Condo packages from  
\$399 (pp/quadruple)

Packages are 5 nights and  
3 days of 2 tank boat dives, tax.  
Some restrictions apply.

For reservations contact

Sea Safaris  
800/243-3325

(In Calif. 310/545-3551)  
Fax 310/545-1672

 Sea Safaris

CIRCLE NO. 53 ON READER SERVICE CARD


## INSTRUCTIONAL

(Continued from page 96)

predation by concealing the individual in a group. But schooling reaches its highest development in fish. Fish in a *polarized school* are perfectly spaced and aligned, seeming to turn and move as a single organism—much to the frustration of jacks and barracuda. An *aggregation* of fish is not the same as a school; they are fish that may be attracted to each other, to a food source or to a reef structure to shelter in.

### SCRATCH MY BACK: SYMBIOSIS

On coral reefs, *cleaning behavior* is the most common example of mutual symbiosis, in which both organisms benefit. Fish pull up to cleaning stations where smaller fish and invertebrates crawl over and inside them to remove parasites, even bits of dead or diseased flesh. The client gets free health maintenance, and the cleaner gets a free meal. To find a cleaning station, look for high coral heads, barrel sponges and anemones, which shelter tiny cleaning shrimp. If you see a stationary fish tilted at an odd angle, head down or head up, gaping with open mouth or gill covers, you'll probably also see small gobies, juvenile wrasses and shrimp doing their job.

**Commensalism**, when one animal benefits but the other may not, can be found in many forms, from clownfish that shelter from predators in the stinging arms of sea anemones, to jacks, which follow stingrays, sharks, goatfish and hogfish to feed on their scraps. Most anemonefish, or clownfish, are *obligate commensals*: They cannot survive outside their hosts, usually spending their entire life within or near a single anemone's tentacles. Clownfish, found only in the Indo-Pacific, gain immunity from the anemone's stings by coating themselves with its mucus. Mutualism may also be at play: some reports indicate that the clownfish feeds the anemone scraps and even lures prey into the anemone's deadly grasp. 

*Noted underwater photographer Doug Perrine holds a degree in marine biology from the Rosenstiel School of Marine and Atmospheric Sciences at the University of Miami.*

## Melia Mayan Cozumel

\*\*\*\*\*

OPENING ALL-INCLUSIVE  
OCTOBER 1994



More than just  
great diving!  
...in the  
Mexican  
Caribbean



All prices are per  
person, double  
occupancy.

**Each Diving Day 2 tanks \$105**  
**Non-Diving Day \$69<sup>99</sup>**

**Values:** Transfers to/from Airport, Hotel, Dive Shop. Lunch Onboard. Tank and Weights. Private Beach. Welcome Cocktail. Breakfast Buffet. Two Swimming Pools. Tennis Courts. All Taxes.

**1-800-336-3542**



**Melia Hoteles**  
Quality at its best.

 Grupo Sol

CIRCLE NO. 39 ON READER SERVICE CARD



## FLORIDA SPRINGS

(Continued from page 97)

### Wacissa Wild

"You want the *real* Florida?" Tim gets around to asking me on the last day of our journey together. I assure him I do.

Seems Tim has a friend in Eridu (don't we all?) who's been promising to give him a guided tour of the springs along the Wacissa River south-

east of Tallahassee. From the phone at B&J's Country Store (sign: "Worms, Fresh Rabbit") in Eridu, Tim summons Mike Bedford, who appears, boat and wife in tow, as if he were just waiting for some inconsiderate magazine writer to appear unannounced to request his services.

Unlike most of the riverside springs we've encountered, the springs along the Wacissa don't merely flow into the river, adding

downstream volume, they actually create the river. A parking area and sand boat ramp at the headsprings provide access. Mike has to make two trips in his 300-pound-capacity bass boat to get us all to **Big Blue Spring**, about a mile down the river: one trip for wife and gear, another for Tim and inconsiderate writer.

Out of sight of the boat ramp, it really could be prehuman Florida. Moss-draped cypress trees line the riverbanks and great waterbirds—snowy egrets, blue herons, cormorants—swoop low and majestic, legs trailing over the water before settling in the trees. Turtles plunge into the water from their sunning spots on fallen limbs as we pass. At intervals along the way, fast-flowing tributaries join the river at right angles, marking a spring in the woods beyond.

Mike finally swings the motor to turn left into one of these streams and the narrower passage magnifies the explorer illusion, as cypress branches reach from one side to the other. It's not hard to imagine being on the first canoe to ply these waters, and finding the treasure at the end of the run—cool, clear water.

Under water, an angled rock face rises 30 feet from the spring basin floor like the submerged portion of an ocean liner's bow. Stands of hydrilla covered in iron algae form a fuzzy brown latticework. At 45 feet, I find the driving force here, an opening in the rock 3 or 4 feet across and crisscrossed by large fallen branches I couldn't squeeze through even if I wanted to. Tim snaps off the end of his roll and heads for the boat as I circle back for one last look.

Surfacing for the last time on this trip, I come up instinctively looking for a sign. As I watch an egret leap from a cypress tree, flash across the still water and into the sun, I realize the most important sign—the one that tells of creation and our need for wilderness—is still easily seen down here in Florida's Spring Country. We just need to be able to read it better. ☺

*Buck Butler (sign: "Walking Salad and Inconsiderate Writer At Work") is an RSD associate editor.*



## Join R.E.E.F.

### Reef Environmental Education Foundation

*"PROTECTING MARINE LIFE THROUGH EDUCATION, SERVICE & RESEARCH"*

REEF invites you to become part of an exciting new underwater activity for recreational divers—monitoring the health of coral reef ecosystems. This important task is vital to the preservation of our marine wilderness.

For decades bird watchers have provided a similar service. Their enjoyable pastime has proven invaluable for the preservation of bird life. Unfortunately, comparable data for marine life is unavailable even for coral reefs that are visited by thousands of divers each year.

REEF's initial goal is the REEF Fish Survey Project. REEF needs volunteers to gather fish species sighting data during their diving vacation in Florida, the Caribbean and Bahamas. Even beginning fish watchers can make significant contributions. No dues or fees are required. Your membership is paid by corporate sponsors from the recreational diving industry. To receive more information, simply drop a note to REEF at:

**REEF • P.O. Box 246 • Key Largo, Florida 33037**

**JOIN TODAY!**



*with the best service  
with the lowest prices  
with 25 years experience*

BELIZE ♦ BONAIRE ♦ CAYMAN  
COSTA RICA ♦ COZUMEL  
CURACAO ♦ DOMINICA  
GUANAJA ♦ ROATAN ♦ SABA  
ST. LUCIA ♦ TURKS & CAICOS

**1-800-328-5285**

5610 ROWLAND ROAD, SUITE 100  
MINNETONKA, MINNESOTA 55343

CIRCLE NO. 114 ON READER SERVICE CARD



## SOUTHERN BELIZE

(Continued from page 46)

butterflyfish are sometimes thick as confetti, as are hamlets, goatfish, hogfish and enough sea cucumbers to make you think you're in a cheese log factory. We quit counting spiny lobster at 25.

Inside this faro's lagoon sits one of Belize's newest marine reserves—**Laughing Bird Caye**, a 50-foot by quarter-mile spit of sugar-powder sand and swaying palms named after the laughing gulls that roosted there before Hurricane Fifi in 1974. Now brown pelicans, green herons and melodious blackbirds call it home. It also serves as a place for nonsinging divers to kick back for lunch between dives and watch the midday sun fire up the see-through water into a china-blue elixir that makes snorkeling this fringing reef impossible to resist.

A former conch cleaning station, the caye's edges are lined by shells embedded in the sand and matted by dense clusters of sun anemones, considered rare in the western Caribbean. The day we lunch here, we aren't the only ones pigging out. From above, dozens of pelicans dive-bomb the shallows, where a river of silversides flows. When not under attack, the waves of baitfish drift beneath the stands of elkhorn spreading their coral branches to bathe polyps in the sun. Sheltering beneath the broad arms are schools of juveniles: glassy sweepers with their potbellies already evident, aggregates of grunts, schoolmasters, even the speckled sailors choice. Some stands of elkhorn break the surface and provide roosts for the pelicans to sit and dream of their next meal.

Near shore, silver is the color du jour. Bar jacks cruise around the baitfish before suddenly darting in to find only a hole in the polarized school of silver. Needlefish float above, trying to blend with the sun-bleached surface. In the shallows, bonefish and mojarra hunt the bottom. Damsels hold court in the thickets of staghorn, keeping gray angels, yellowtails and porgies at bay.

In some spots the water is so warm it feels like a jacuzzi. I float on my back, letting the warmth and the lagoon's gentle crenulations massage my muscles as I watch the pelicans overhead. I



## THE BEST OF ROATAN

### Fantasy Island Beach Resort Dive & Marina

*All guest accommodations feature tasteful tropical motifs, air-conditioning, satellite TV, private phone and refrigerator and are located in beautifully landscaped central, hillside, beachside and poolside settings.*

*Our complete dive operation provides a Dive Gazebo for easy entry to excellent shore diving, a fleet of 42-foot custom dive boats and south shore/north shore dock facilities for access to diving both coasts of Roatan.*

*Call or write today for a complete dream dive package!*

Fantasy Island Beach Resort Dive & Marina, 5353 Tyson Avenue, Tampa, FL 33611

ROATAN-BAY ISLANDS-HONDURAS

**(800) 6-ROATAN (813) 835-4449**

CIRCLE NO. 31 ON READER SERVICE CARD

**Anthony's  
Key Resort**

**ROATAN, BAY ISLANDS, HONDURAS**  
**DOLPHIN DISCOVERY PROGRAM.**

**THE DOLPHIN SNORKEL PROGRAM** IS THE RARE OPPORTUNITY FOR SNORKELERS TO INTERACT WITH DOLPHINS IN A PROTECTED AREA OF THE RESORT LAGOON.

**THE DOLPHIN DIVE PROGRAM** IS A UNIQUE OPPORTUNITY FOR SCUBA DIVERS TO OBSERVE AND INTERACT WITH DOLPHINS ON THE CORAL REEF IN OPEN WATER.

**1-800-227-3483**

CIRCLE NO. 14 ON READER SERVICE CARD



remember the story Malcolm told us of how old pelicans die: Knowing they can no longer hunt effectively, they make one last dive into the sea—and intentionally break their neck.

Such is life—and death—on Laughing Bird Caye.

**B**arrier reefs, faroes, fringing reefs—so much diving you might be tempted to skip another of Southern Belize's unique

venues: wet cayes. Don't.

The inner lagoon's soft mud bottom and protected shallow depths allow mangrove seeds to settle and take root miles from the mainland. The result is mangrove cayes ("wet cayes" since they haven't yet formed a solid landmass) growing almost literally in the middle of a sea. Like any structure in the open ocean, these cayes are magnets for marine life. Frigate birds and boobies use the wet cayes as a home-roost each

night after a hard day hunting on the barrier reef. And beneath the mangroves' emerald water you'll find one of nature's most overcrowded nurseries.

As Malcolm eased our boat into the shallows of **Tarpum Caye**, looking for clear water and careful not to stir the muddy bottom, I pointed to the long swatches of black beneath the surface. Turtle grass? Fringing reef? Suddenly the dark bottom narrowed and flowed with us, quivering atop the white mud. The hundreds of pelicans overhead should've been my clue: these were dark rivers of silversides flowing around the cayes, vast polarized schools that numbered, literally, in the millions.

As Curtis and I snorkeled to the edge of mangrove trees, the layer of silversides parted to let us through, forming a dark tunnel of fish that conformed perfectly to the shape of our bodies. Sometimes they would ping against our mask plates in panic when a pelican splashed beside us.

Among the roots, orange mangrove tunicates and lemon-bright encrusting sponges clung to the gnarled fingers digging into the mud. Hiding among the prop roots were juveniles of dozens of species: cowfish, trunkfish, sergeant majors, grunts, snappers, octopus, eels and crabs. Through a wide gap in the trees we tried to swim to an inner lagoon but had to stop: the water had been churned milky white by the schools of tarpon that were feeding furiously on the baitfish.

As we left Tarpum Caye that afternoon, snorkeling a mangrove island seemed the right way to end a week in Southern Belize: we had stuck our noses in something new and had been blindsided by the unexpected. Most of all, we had glimpsed life on a primal scale, oblivious to the humans poking about. Those tarpon had only one thing on their mind and it wasn't posing for souvenir snapshots. Like any wild animal, they were blessed with the ability to live totally in the present, to focus solely on the moment—a somewhat mixed blessing if you happen to be a silverside.

*David Taylor is the managing editor of Rodale's Scuba Diving.*

**\*RATED 1 OUTSTANDING OVERALL!**

**THERE ARE SO MANY...**

different people, places, and ways of diving that no ordinary regulator will suffice for them all. That's why Zeagle's TECH-50D exceeds US NAVY performance standards and is completely environmentally sealed with a dry seal (not an air bleed or messy silicon) to resist freezing and contamination. Rated #1 outstanding the TECH-50D excels in normal, demanding, and extreme conditions. Now, for all the different people, places, and ways...

**...THERE IS ONLY ONE**

**Zeagle®**

The optional DIN to yoke converter, enables you to dive your TECH-50D on most any tank.

Firststage with 300 bar DIN fitting (shown) or standard Yoke.

\*Scuba Diving Magazine June '93. Phone (813) 782-5568 Fax (813) 782-5569

**We're Literally... OFF THE WALL!**

**DIVE PACKAGES from \$559 pp/do**

**8 days/7 nights  
5 days of diving**

**Wall Dives Minutes Away • Unlimited Beach Dives  
Night Dives Available • PADI Instruction Available**

**809-946-2159**

**Fax 809-946-1152**

CIRCLE NO. 41 ON READER SERVICE CARD



## COMPUTERS

(Continued from page 92)

planning your dive and knowing your no-decompression limits before you dive, as well as monitoring your decom-

### HOW TO SELECT YOUR DIVE COMPUTER

Sound like an air-integrated dive computer is just the ticket to transport you into the 21st century of recreational diving? To find the air-integrated computer best suited for your individual diving needs, consider these steps:

1. Determine whether you want a conservative or liberal dive computer, based upon your diving style and the type of diver you normally buddy up with. A conservative computer will help distance you from the likelihood of DCS, but by restricting your diving, it might also become a major frustration. See the chart on page 90 for a breakdown of which computers have liberal programs and which have conservative ones.

2. Consider how much control you wish to maintain in your diving, the kind of information you need a dive computer to provide and any additional features that suit your diving style—now and in the future. For example, although you're not a wreck diver right now, do you live in an area where that may become an interest?

3. Refer to the Features and Evaluations chart on page 89 as well as the individual descriptions of each computer to find the two or three models that best suit your needs.

4. Once you've chosen two or three computers that interest you, head out to your dive store to check on availability and competitive pricing. And be sure to ask for a demonstration so that you feel comfortable with the computer's display of information.

In past evaluations we've stressed the importance of dealer prep and support. Your dive retailer should provide the dive computer you've selected with written and verbal instructions, as well as a guarantee that, in the event of a problem, you'll have help in getting satisfaction under the manufacturer's warranty.

pression status throughout the dive.

Remember, dive computer failures are rare. Through prevention, early detection and proper identification of the problem, most can be solved. Have a backup or a plan for bailing out in the event all else fails.

Jon Hardy is RSD's ScubaLab™ test supervisor and products editor. John Brumm is RSD's West Coast Editor and Val Hodges-Palmer is an active dive instructor.

## Coming Next Month in *Rodale's Scuba Diving*

### 1995 GEAR BUYER'S GUIDE

Vital Specs on more than 1,600 products

with new-for-'95 equipment including:

Dive Computers · Skins, Wetsuits, Dry Suits  
Underwater Cameras and Video Systems · BCs · Fins · Gauges  
Tanks · Gear Bags · Lights · Masks · Snorkels · Regulators

Know Before You Buy!

## YOU DON'T HAVE TO DREAM ABOUT DIVING IN PALAU

This is your dive trip of a life time. You work hard for your money, so why take chances. Dive with Palau's foremost dive operation. Our friendly, experienced guides are the best in the business and our fleet of 26' dive boats will speed you to the best dive sites in the world! **Fish 'N Fins** and the **Marina Hotel** are made for divers and offers the best value in Palau!

*So what are you waiting for?*

#### Dive package special!

**\$142 pp dbl occ/night.**

Includes: 2 tank dives, room  
& tax, airport transfers,  
breakfast, lunch

**--unlimited dive pkgs also  
available! Call now!**



**Fish 'N Fins- Palau**  
Micronesia

Make your reservations now,  
call direct at 011-680-488-2637  
or fax 011-680-488-1725!  
P.O. Box 142, Koror, Palau 96940

CIRCLE NO. 32 ON READER SERVICE CARD

## vir·gin (vûr-jĭn)n.

**COMMON DEFINITION:** In a pure or natural state; unsullied, unused, uncultivated and unexplored.

**DIVING DEFINITION:** Lighthouse Reef Resort, Northern Cay, Belize, Central America.

**E**njoy the Caribbean's most remote land-based diving resort situated in the pristine environs of Lighthouse Reef Atoll. Dive the Blue Hole, Half Moon Cay Wall, the Abyss and countless other world-class dive sites – many to be explored for the first time. Fly to this private island paradise and enjoy the A/C comfort of our beach front cabanas.



Call now for information on new package offerings.

**Lighthouse Reef Resort**  
USA 1 (800) 423-3114

CIRCLE NO. 35 ON READER SERVICE CARD



# You can!

## "I did!"

©1994 Rodale Press, Inc.

**Land photographer whets his appetite for underwater beauty.** Tom Isgar, of Sarasota, Florida, amateur land photographer and avid scuba diver—here capturing an angel fish—always wanted to combine these two loves. Tom says: "An article in Rodale's *Scuba Diving* showed me how. Off to Grand Cayman Island for underwater photography school! With camera in hand you're

not underwater just looking; you're looking to bring back a record of a world that knocks you out. Many people don't know how fantastic it is down there. Now I can show them.

"My next step—to capture on film critters I'll never see anywhere else—off the Great Barrier Reef, off Bali, off the Red Sea, off...."



### *Rodale Press helps you grow*

We show you how "You can" in all our publications: *Prevention*  
• Organic Gardening • Runner's World • Bicycling • Mountain Bike • Men's Health  
• Backpacker • American Woodworker • Rodale's Scuba Diving • Rodale's Specials  
• Rodale Books on Health, Gardening, Woodworking, Quilting, Crafts

If you'd like to share your success story with our readers, write to: You can!-I did!, Rodale Press, 33 East Minor Street, Emmaus, PA 18098-0099



## COMPLETE DIVING PACKAGES (Feathers Not Included!)



**SOL CARIBE  
COZUMEL**

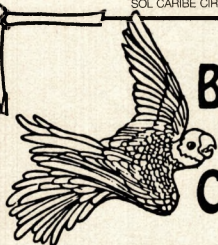
- A Scuba World "Dive Resort of the Year"
- Daily 2-tank boat dives, gear lockers, on-site pier pick up, excellent shore diving.
- Packages starting from \$ 237.

**FANTASIA DIVERS**



**1-800-848-4020  
1-800-336-3483**

FANTASIA CIRCLE 30  
SOL CARIBE CIRCLE 115



**BAYMAN  
BAY  
CLUB**

"Perhaps the most beautiful  
secluded resort on the Bay Islands"  
Fodor's Travel Guide

Let Us Immerse You **1-800-524-1823**  
Dive Into Adventure

CIRCLE NO. 20 ON READER SERVICE CARD

**Aqua'nauts  
Cayman Islands  
Diving**

Adventure  
Exotic Marine Life  
Personalized  
Service  
Lots of Laughs  
Great Memories

**Q: What's the perfect  
dive vacation?**  
**A: Whatever you  
want it to be!**

Call how for more selection of Hotel/Condo/Dive packages.  
Group rates available.

**800-357-2212 ext. 0005**

P.O. Box 30147 SMB, Cayman Islands  
Phone (809)945-1990 • Fax (809)945-1991

CIRCLE NO. 15 ON READER SERVICE CARD

## Why Do These Serious Divers Dive with RALPHIES?



for the love of diving  
**Grand Cayman's North Wall.**

**RALPHIE'S**  
for the love of diving.

PADI 5 STAR INSTRUCTOR DEVELOPMENT CENTER

**(800)453-8984**

Box 30442 SMB, Grand Cayman, B.W.I.  
Tel: (809)949-3099 • Fax: (809)949-3822

CIRCLE NO. 45 ON READER SERVICE CARD

## CLUB COZUMEL CARIBE

**ALL-INCLUSIVE**

**\$ 99 / FREE \*  
7th NITE**

- Beachfront Resort
- All meals
- All you can drink
- All tips • All taxes
- Sailing • Windsurfing
- Kayaks • Kids' Klub
- Unlimited snorkelling
- Beach parties • Aerobics
- Fiestas • Starlight cruises • Games
- Nightly entertainment • Disco

**\$25**

Two-Tank  
Dive!

Discounts on night diving  
and horseback riding!

**\$ 100  
BONUS  
REBATE**  
ASK US

\*p/p dbl/occ, per night, Gardenview.  
Valid to 12/15/94. Prices & inclusions  
subject to change without notice.

**1-800-327-2254**



**BARBACHANO**  
Tours Since 1921

CIRCLE NO. 19 ON READER SERVICE CARD

## REWARDS...

... are countless when diving the ADVENTURES OF STELLA MARIS UNDERWATER:

- Treasure Diving
- The Original Shark Reef
- World' Deepest Blue Hole
- The Hemisphere's Best Edge - "Conception Wall"

... not to mention exquisite leeside reefs, dramatic Atlantic coral fields, no-extra-cost overnight live-aboard dive cruises... plus the many superb values and enjoyments of a 50 room/villa cottage resort, set into a magnificent ocean palm garden... with 8 beaches, 3 pools, on an unspoiled island, where the ocean is clearest, and nature pristine!



Week's Dive Package  
from \$580.00.



**Stella Maris  
Resort Club**

SOUTHERN BAHAMAS • OUT ISLANDS

**800-426-0466 or 809-338-2051**

CIRCLE NO. 112 ON READER SERVICE CARD

## HOW TO BOOK YOUR BONAIRE DIVE VACATION.

Our FREE GUIDE TO BONAIRE includes maps,  
lodging descriptions, discount travel information

& package prices along  
with NEW lodging and  
diving options!

**CALL  
THE  
BONAIRE  
EXPERTS!**

**(800)748-8733 (601)353-7547**



CIRCLE NO. 33 ON READER SERVICE CARD

**COZUMEL**

**FIESTA INN**  
A 4-Star Resort

**ENJOY THE LUXURY  
OF PAYING LESS**

**3-TANK BOAT  
DIVING**



Request our FREE brochure  
**TROPICAL ADVENTURES**  
**800-247-3483**

**WA (206) 441-3483 • FAX (206) 441-5431**

CIRCLE NO. 54 ON READER SERVICE CARD



HOT  
DIVE  
S

# Bahia Tours

AIR LAND & SEA ♦ DIVE TRAVEL WHOLESALERS

MAJESTIC MUNDO MAYA DOLPHIN DISCOVERY

EXOTIC ECOTOURS WORLD CLASS DIVING

305-858-5129 ♦ 800-443-0717

MORE DESTINATIONS AVAILABLE ♦ FULL COMMISSIONS PAID

COSTA RICA ♦ BELIZE ♦ BONAIRE

CIRCLE NO. 18 ON READER SERVICE CARD



## PALAU

Personalized, professional dive tours!  
Affordable hotel packages! Sam's Dive Tours  
Diving with the personal touch!!!  
(ph)011-680-488-1062 ext. ROD  
(fax)011-680-488-5003

CIRCLE NO. 49 ON READER SERVICE CARD

*You'll Find Nothing Like Us Under the Sun*



*Dive Vacations: 8 days / 7 nights*

...room, 3 dives/day, all meals  
transfers, taxes and the most  
incredible reef in the Caribbean

Only \$525. Call 800-934-DIVE

Sunrise Roatan Resort

CIRCLE NO. 23 ON READER SERVICE CARD



Private, elegant  
live-aboard  
accommodations  
for four with  
increased  
occupancy to  
six for acquainted  
group.

Day Charters, special  
cruise itineraries available  
upon request

### One Week Itinerary

- Unlimited Diving
- Sport Fishing
- Snorkeling

### Cruise and Visit Remote Romantic Cayes

- Blue Hole
- Tuneffe Islands
- Lighthouse Reef
- Glovers Atoll
- Southern Barrier

**CALL  
1-800-HOT-DIVE**

CIRCLE NO. 37 ON READER SERVICE CARD

## DIVE BIMINI



Dive miles of shallow and medium depth reefs, dramatic  
walls that drop to over 2000' deep and several intriguing  
wrecks. You'll stay at the Bimini Reef Club and Marina,  
the island's only first-class resort. Enjoy their white, sugar-  
sand, private beach and magnificent views. Our custom  
built dive boats and dedicated professional crews will  
assure your diving satisfaction.

**\$349**

3 days/2 nights includes:

- Roundtrip air from Ft. Lauderdale  
to Bimini
- Oceanfront motel—double  
occupancy
- Airport transfers on Bimini
- 3 dives daily; 2 on arrival and  
departure days
- Night dives. Tanks, weights and  
belts
- Longer stays available. Weekday  
pkg. specials
- Call for group and shop rate  
quotes



Call for our free brochure  
**1-800-329-1337**  
Fax (904)255-9965

CIRCLE NO. 17 ON READER SERVICE CARD



Dive North Carolina's  
Graveyard of the Atlantic

World Class Wreck Diving  
Including U-352

- Daily & overnight trips
- Groups & individual charters
- 5 Dive boats
- New dive lodge
- NAUI Pro Facility

**Summer Group Special  
\$269.00**

4 days of boat diving / 5 nights lodging  
Special lodge & hotel rates

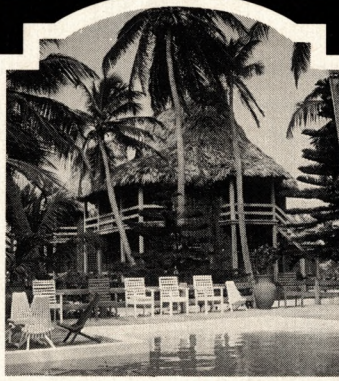
Call Today

**800  
992-1258**



P.O. Box 486 • Morehead City, NC 28557

CIRCLE NO. 42 ON READER SERVICE CARD



B . E . L . I . Z . E

Sunny blue skies, tropical trade-  
winds, palm thatched cabanas,  
the second largest barrier reef in  
the world and a fully staffed and  
equipped dive center are all just  
part of what makes Ramon's  
Village one of the most unique  
vacation spots in the world.



*Ramon's Village*  
Ambergris Caye, Belize

See your travel agent or call  
**800-Magic-15 or (601) 649-1990**

CIRCLE NO. 46 ON READER SERVICE CARD

**DIVE  
YAP**

Enjoy 5 days of diving with **Yap Divers**  
and spend 5 nights at the modern **Manta Ray  
Bay Hotel**, and discover the beauty and  
thrills of Yap's world-class dive sites: **Manta  
Ridge, Lionfish Wall, Shark Pinnacles,  
Trevally Pass, Eagles Nest, Yap Caverns,**  
and so much more!

Call Bill Acker today and inquire about  
our special 5 day / 5 night Yap Divers Pack-  
age and plan your dive travel adventure to  
Micronesia's most exotic island!

Bill Acker, **Manta Ray Bay Hotel &  
Yap Divers**, P.O. Box MR, Yap, FSM 96943,  
Western Caroline Islands

Phone: 011 691 350 2300  
Fax: 011 691 350 1567

**MANTA RAY  
BAY HOTEL  
&  
YAP DIVERS**

CIRCLE NO. 38 ON READER SERVICE CARD



## THE WATER PLANET

(Continued from page 118)

plankton and sticky sugars produced by the diatoms, it seems the particles agglomerate into somewhat larger, carbon-rich snow aggregates. Then, at a previously unimaginably rapid rate of 150 to 300 feet a day, the new particles sink to the seabed.

In addition to working out the transport role of snow in the all-important carbon cycle, Alldredge and Silver have also studied the bacteria that flourish on the aggregate's surfaces. It appears that they, too, serve a vital function. Because very little other nutrient matter ever makes its way five miles down to the dark, near-freezing regions of the ocean floor, the snow-borne bacteria and other microorganisms are a primary food source for sea-bottom dwellers, forming a crucial early link in the entire oceanic food chain. Moreover, for reasons not yet fully understood, this bacteria that grows on the snow contains 10,000 times the carbon of similar free-swimming bacteria. Remarking on the phenomenon, Alldredge has referred to the snowflakes, despite their microscopic size, as "islands which produce a unique chemical environment."

Both lay and scientific commentators regularly make much of the undiscovered nature of the planet's watery realm, and the oft-cited estimate that only one-tenth of 1 percent of the ocean has been surveyed is frequently offered as evidence of the dramatic wonders which, with further pelagic exploration, might await us.

Yes, of course, further exploration of the adventurously heroic kind would no doubt advance our knowledge. But there is also something quite delightful, I think, about the far-from-simple wonders to be found in the silent fall of an improbable snowflake somewhere dark in the fathomless deep.

Contributing editor David Abrahamson writes on natural history and environmental subjects for a number of national magazines, including The New York Times Magazine, Oceans and Science.

**NEW! LOWER PRICES!**

|                                             |                                                  |
|---------------------------------------------|--------------------------------------------------|
| <b>COZUMEL</b><br>4 nights from \$217       | <b>BONAIRE</b><br>7 nights from \$414            |
| <b>ROATAN</b><br>7 nights, meals from \$525 | <b>DOMINICA</b><br>7 nights from \$799           |
| <b>NASSAU</b><br>4 nights from \$398        | <b>VIRGIN GORDA</b><br>7 nights from \$640       |
| <b>GRAND CAYMAN</b><br>7 nights from \$569  | <b>CAYMAN BRAC</b><br>7 nights, meals from \$875 |

*Or any combination you wish!*  
Plus Liveaboards, Bimini, St. Lucia, Tortola, Provo, St. Vincent, Puerto Rico, Grand Turk and others...

**Caribbean Adventures**  
1-800-934-DIVE  
CIRCLE NO. 22 ON READER SERVICE CARD

**Australia's REEF EXPLORER**  
*Exotic Dive Adventures*



"Off the Beaten Path" Diving to the Coral Sea and Far North Great Barrier Reef. 10 diver/4 crew. A/C cabins. From \$900 - \$2750 (Up to 40 dives)

**ADVENTURE EXPRESS**  
800-443-0799  
415 442-0799 • FAX 415 442-0289  
CIRCLE NO. 13 ON READER SERVICE CARD

**INNERSPACE ADVENTURES**  
*Economy to deluxe... One call gets them all!*

**BELIZE... \$1349!**  
7 nites Lighthouse Reef, 6 dive days, all inclusive, air from MIA, MSY, IAH.

**BONAIRE... \$1095!**  
7 nites condo, 6 boat / unlim. shore dives, minivan, taxes, air from MIA!

Call for our low airfares, group rates and our FREE 24 page brochure!

**1-800-833-SEAS**  
CIRCLE NO. 34 ON READER SERVICE CARD

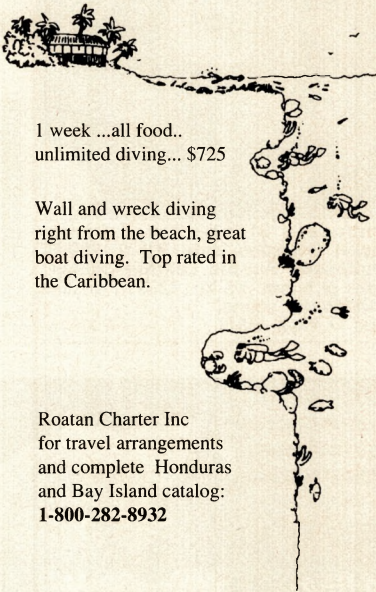
**FREE INFO SCUBA DIVING.**  
Rodale's

and our advertisers, offer booklets, catalogs, and other

**DIVE**

useful information to keep you informed about the latest products, services, and travel destinations. Look for the offer in this issue.

**110foot wall**  
a snorkel away from the bar



1 week ...all food... unlimited diving... \$725

Wall and wreck diving right from the beach, great boat diving. Top rated in the Caribbean.

Roatan Charter Inc for travel arrangements and complete Honduras and Bay Island catalog:  
1-800-282-8932

**CoCoVIEW RESORT**  
Roatan, Honduras Bay Islands  
CIRCLE NO. 48 ON READER SERVICE CARD

**DIVE KEY LARGO, FL — PENNEKAMP PARK**

**KELLY'S ON THE BAY**  
A Very Special Place  
MM104 • KEY LARGO, FL  
**\$85.00**  
Two spacious boats

2 locations • 2-tank dive • Room and Full Breakfast (per person, dbl. occupancy, 2 night minimum, no holiday weekends)


- Personalized diving: U/W weddings with full catering
- Amenities: Full service photo/video center, jacuzzi, wave runners, kayaks, and romantic sunsets.
- PADI & NAUI instruction open water referrals
- Fishing trips, Everglade tours, and dolphin swim

Free Color Brochure/Reservations  
**800-226-0415**  
CIRCLE NO. 16 ON READER SERVICE CARD

**DIVE BELIZE**

NAUI certification courses. Daytrips or "Caribbean Cast-away" packages to the Barrier Reef, cayes and atolls. Also, river safaris to see howler monkeys and gentle manatees.

**BLACKLINE DIVE SHOP**  
**1-800-493-8426**  
(305)493-8426  
P.O. Box 332, Belize City  
Belize, Central America



CIRCLE NO. 21 ON READER SERVICE CARD



## RELIEVE THE DIVE!

WEARABLES & COLLECTABLES FOR THE DIVING ENTHUSIAST!



**Embossed Stone-washed Denim Jacket.** Oversized, unisex XS-XL. \$89.95  
**Embossed Supple Leather Jacket.** Black or brown. XS-XL. \$269. Familiar underwater scene. plus \$7.95ea. S&H

Send Name, Address, Phone #  
 with Check or Money Order to:  
**ENVISIONS Ltd.**  
 Box 349, Adelphia, NJ 07710  
**800-724-3728**  
 Major Credit Cards Accepted



NJ Residents add 6% Sales Tax.

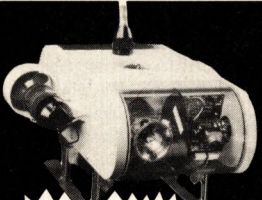
**MAGIC MUGS & TANKARDS**  
 10 oz. Porcelain Mug - Shadowy boats disappear with each cup of hot coffee! Scene changes to reveal multicolored fish and underwater divers. \$9.95.

20 oz. Tankard - Ice cold beverages transform this design onto a brilliant tropical reef scene. \$10.95.  
 \$3.95 ea. S&H.  
 Hand washing recommended.

**Dive Flag Car Ornament.** Brass And Cloissone. Mounts Included. \$24.95 plus 4.95ea. S&H

CIRCLE NO. 79 ON READER SERVICE CARD

BEST WAY TO DIVE.  
 SURFACE CONTROL.  
 CAMERA ROTATES.  
 COMPLETE SYSTEM.  
 LOWEST COST.



A REAL  
 R.O.V.

**\$1895.00**

**Subsea Video Systems**  
 P.O. Box 5505  
 Slidell, LA 70469  
 (504) 649-9463

DIVE  
 -300'  
 -ICE  
 -CAVE  
 -WRECK

CALL ABOUT OUR OTHER FINE PRODUCTS.

CIRCLE NO. 83 ON READER SERVICE CARD



**Dolphin  
 Puzzle**

**1-800-Two-Ring**

CIRCLE NO. 80 ON READER SERVICE CARD

### Underwater Photo-Tech

Repairs of underwater camera systems!  
 Sales, service, custom modifications, rentals

One Call Does It All  
**(603)432-1997**

16 Manning St. • Suite 104 • Derry, NH 03038

CIRCLE NO. 84 ON READER SERVICE CARD

REACH  
 DIVE  
 ENTHUSIASTS

WITH A TRAVEL OR  
 PRODUCTS & SERVICES AD.  
 FOR MORE INFORMATION  
 CALL 912-351-6224

The **only policy for divers** that also covers  
 other watersports and boating accidents.

Scuba diving  
 Snorkeling  
 Water skiing  
 Windsurfing  
 Fishing  
 Kayaking  
 Boating  
 Sailing  
 and more!  
**DIVER'S  
 SECURITY  
 INSURANCE**  
 In a hurry?  
 Call today  
 for immediate  
 protection.  
 1-800-288-4810

CIRCLE NO. 78 ON READER SERVICE CARD

**TELL THEM  
 YOU SAW  
 IT IN  
 SCUBA DIVING.**

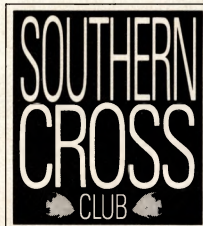
## Climb Our Coral Canyons.

Experience Bloody Bay Wall. Little Cayman's unspoiled sportsman's paradise. Comfortable oceanfront rooms. Breathtaking sunsets on your doorstep.

Little Cayman, BWI  
 Write or call us today!  
**(800) 899-CLUB  
 (2582)**

(317) 636-9501/FAX: (317) 636-9503

U.S. Address: 1340 E. Merchants Plaza  
 Indianapolis, IN 46204



**DON'T GET  
 LOST AT  
 SEA!  
 DIVE  
 • ALERT  
 EMITS A  
 LOUD BLAST  
 HEARD UP  
 TO A  
 MILE AWAY**

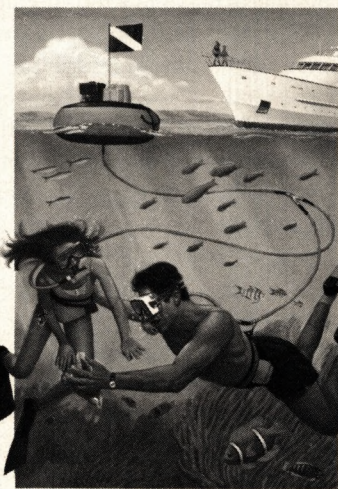
ASK YOUR DIVE SHOP FOR

**Dive-Alert**

Ideations, P.O. Box 99575, Seattle, WA 98199  
**800-275-4332 FAX 206-285-6897**  
 US & FOREIGN Patents

CIRCLE NO. 8 ON READER SERVICE CARD

**ADVENTURE  
 IS ALWAYS  
 ON THE LINE.**



**BROWNIE'S**  
*Third Lung*

Surface Air, and  
 Tank-Fill Compressors

**1-800-327-0412**

940 N.W. 1st Street • Ft. Lauderdale, FL 33311

CIRCLE NO. 7 ON READER SERVICE CARD



## CLASSIFIEDS

### AUSTRALIA

**PRO DIVE CAIRNS** - GREAT BARRIER REEF - 3 day-2 night live-aboard cruises to the outer reef 4 times weekly, 11 dives Au \$350.00/ U.S.\$250(average). PADI 5 STAR IDC beginner - instructor courses. Day trips daily, Cod Hole & Coral Sea twice weekly. Ph Intl+6170 315255 - Fax Intl+6170 519955.

### BAHAMAS

**BAHAMAS - VACATION HOME** - Hopetown, Abaco ocean-front cottage for four overlooking world's second largest barrier reef. Dive shops available. Brochure. \$800/week. (603) 673-6079

**GULF STREAM DIVER** - (800) 488-3483 Fax (407) 743-5747 100' Gulf Stream Eagle - Live-Aboard Bahama Trips since 1978. Walls, Reefs, Dolphins, Shark Feedings, Blue Holes.  
**LITTLE ISLAND...BIG THRILLS Bimini** in the BAHAMAS. Outstanding diving in a safe and relaxing atmosphere. Super value packages include 3 dives daily, free night dives Wednesday and Saturday, free advanced openwater course and/or free check out dives with 5 day stay. Also, pay for 6 days, receive 7th day free. P.O. Box 21623, Ft. Lauderdale, FL 33335. Bill and Nowdia Keefe's Bimini Undersea Adventures 1-800-348-4644/ FAX 800-347-3079.

### BAY ISLANDS, HONDURAS

**REEF HOUSE RESORT / MAYAN VIP TOURS** - Dive ROATAN'S resplendent, unspoiled reef. Mayan Ruins, adventure, tropical tours on mainland Honduras. 1-800-328-8897.

**ROATAN** - Secluded beach house with private dock, fully furnished, three bedroom, two bath, sun deck. Easy access to diving. 1-303-420-1187.

**ROATAN / CENTRAL AMERICA** - Best dive resorts, live-aboards in Bay Islands and Costa Rica. Special airfare packages, individuals or groups. 1-800-367-5960.

**ROATAN RESORTS** - Full week diving, all meals, transfers, oceanfront bungalow facing Caribbean sunset. \$499. Low airfare & tours too. 1-800-392-6292.

**SUENO DEL MAR DIVE RESORT/ROATAN** - Beach front rooms, restaurant, bar. Inclusive dive packages or single night accommodations. Gear rentals / lessons. 1-800-377-9525.

### BELIZE

**BELIZE DIVE PACKAGES** - For individuals and groups. Aggressive pricing. Economy to luxury, land or live-aboard. Special airfare packages. 1-800-367-5960.

**BELIZE'S PREMIER DIVE FACILITY** - Reef dives, Blue Hole trips. Hotel / Dive packages starting at \$399. Gaz & Dave's Belize Dive Center. 1-800-938-0860.

**SAINT GEORGE'S LODGE** - Top-quality diving and certifications. Weekly packages from \$1,299. Arrive / depart ANY DAY. Excellent food and accommodations. 011-501-244190; (800) 678-6871.

### BONAIRE

**TOWNHOUSE ON THE BEACH** - 2br / 3ba, great shore / boat diving. Dive shop close by, snorkel & windsurf, too. Phone / Fax 516-694-3430.

### BRITISH VIRGIN ISLANDS

**DIVE AND SAIL THE BVI's** - Experience the CUAN LAW - the world's largest trimaran & one of the most impressive liveaboards found anywhere. Excel diving, great food, and friendly staff. Call LANDFALL ADV TRVL 800-525-3833. US/CAN. CA 510-794-1599

**DIVE BVI LTD.** - With 3 convenient locations in the BVI. Hotel and dive packages available starting as low as \$665.00 pp. for a 7 night / 5 day diving package. Call direct for information or reservations 1-800-848-7078.

### CALIFORNIA

**MONTREY'S KELP FOREST**. Best Kept Secret. Silver Prince - Monterey's Most Experienced Dive Boat. Best Value. Air / Hotel / Dive Packages for Individuals or Groups. (510) 794-1599. U.S. / Canada 1-800-525-3833.

### CAYMAN ISLANDS

**CAYMAN BRAC BEACH HOUSE RENTALS** - Private homes / condos from \$595 week. Dive spectacular reefs of unspoiled Brac and Little Cayman. Discount Dive Packages. Jim (503) 426-8863.

**CAYMAN BRAC LUXURY** - Enjoy 7 unhurried days in a spacious 2 bdrm condo on white sand beach. Palm trees, peaceful views, stary nights, friendly people, outstanding diving. Dive packages from \$725 per diver. Free detailed brochure. Brac Caribbean Beach Village, Box 4-R, Stake Bay, Cayman Brac, BWI; toll free 800-791-7911, fax (407)655-8990.

### COSTA RICA

**COSTA RICA DIVE PACKAGES LOW PRICE AIR** - Miami, New York, New Orleans, San Francisco, L.A., Orlando. RESORT EL OCOTAL DIVING SAFARIS PADI 1-800-327-8554.

### DOMINICA

**DOMINICA TRAVEL SPECIALIST** - Widest selection of scuba / vacation / honeymoon economy to luxury resorts. Call LANDFALL PRODUCTIONS DIVE & ADVENTURE TRAVEL U.S. / CANADA 1-800-525-3833 CA (510) 794-1599  
**EAST CARIB DIVE / LAURO CLUB** - USA / Canada 1-800-867-4764 Diving and Watersports. Villa accommodations, PADI & CMAS instructors provide personalized service; Packages, individuals, groups, instruction.

### FUJI

**FIJI TRAVEL SPECIALIST** - Wide selection of Budget, Luxury, and Honeymoon dive / vacation resorts. Customized multiple island packages available. LANDFALL PRODUCTIONS ADVENTURE TRAVEL U.S. / Canada 1-800-525-3833. Calif. (510) 794-1599.  
**TAVEUNI, FIJI ISLANDS** - 1-800-541-4334 Limited Space. \$1800 10da / 7ni, Grp. Spcl., Incl. AIR. CALL FOR 1994 DEPARTURES.

### FLORIDA

**CRYSTAL RIVER** - Manatee snorkel tours and guided packages for all Florida Springs and Gulf of Mexico. 3-day certifications. PADI, NAUI. American Pro Diving Center. 1-800-291-DIVE.

**DESTINATION ATLANTIS** - Wrecks! Dive the Jet, natural reefs, & South Beach. Dive Miami & beyond. Shark diving in Bahamas, Whale diving in Alaska & diving in the Keys. 305-451-5260, 1-800-DIVE-MIA.

**DISCOVER FT. LAUDERDALE'S EXCITING WRECKS** - and majestic reefs with Omega Blue's custom 6-passenger luxury dive boat. 4-Day PADI certification. Camera rentals, hotel packages. 1-800-755-3111, (305) 783-3111.

**DIXIE DIVERS** - A chain of FULL Service Professional Dive Stores:

Key Largo 800-842-8788,  
Deerfield Beach 305-420-0009,  
West Palm Beach 800-456-3188,  
Stuart 407-283-5588,  
Ft. Pierce 407-461-4488,  
Vero Beach 407-770-1188,  
Palm Bay / Melbourne 407-723-8888,  
Lakeland 813-648-4333.  
SEDI 1-800-456-2188

**HIGH SPRINGS** - Luxury 6-Room Inn on 40 wooded acres, pool. Healthy gourmet fare. Great Outdoors Cafe & Inn. 904-454-2900.

**LEARN FROM WORLD RECORD DIVER HAL WATTS** - Deep Air, Nitrox, Trimix, Cavern, Cave. 9487 NW 115th Avenue, Ocala, FL 32675. (904) 368-7974, (407) 896-4542 Fax.

**MANATEE SNORKEL TOURS** - In warm Florida Springs. Cavern, cave, Nitrox, and Tri-Mix instruction through "Bird's Underwater". 1-800-771-2763

**RON JON WATER SPORTS CENTER** - Everything for every water sport! Sales, accessories, service - dive & snorkel, surf, ski, more - For beginners to professionals. Ron Jon Surf Shop, 520 & A1A, Cocoa Beach, FL (407) 799-8840.

### FLORIDA KEYS

**AMERICAN DIVING HEADQUARTERS** - Wet your feet with American Diving Headquarters! Serving Pennkamp Park & Key Largo Marine Sanctuary since 1962. Fantastic Dive/Motel packages from \$70 per day. 10 dives \$160. Includes tanks & weights. PADI Facility. Family & group rates. Call 1-800-634-8464. Keys only money back guaranteed trips.

**APARTMENT W/BOAT** - Plantation Key MM 90.5 Waterfront. Completely Furnished Large 1 / Bedroom Apartment Accommodates 4 / People W / 18 Ft. Boat, Dive Platform, Radio, etc. \$425 / Week or \$895 / WB. 1-800-332-7717, 305-221-6711.

**BILL HARRELL'S DIVE INSTRUCTION** - Private PADI Instruction from Master Instructor. Open Water through Divemaster, Referrals, 17 Specialties. Upper Keys. Call 1-800-959-DIVE.

**FLORIDA KEYS DIVE CENTER** - We offer REEF, WRECK, LAND dives in Pennkamp Park and beyond. We're a PADI 5-STAR I.D.C. CENTER specializing in private, personalized instruction. Referrals and Monthly Instructor Courses. Luxurious condos, DIVE / LODGING PKGS. Call 800-433-8946, 305-852-4599.

**KEY WEST - LOOKER DIVING CENTER** - 1-800-245-2249. (305) 294-2249. Value • Selection • Service • Packages • PADI • NAUI • SSI • Charters.

**KEY WEST - SOUTHPOINT DIVERS** - 1-800-824-6811. Key West's Premier Dive Shop -- We have the Pro 42 Jet Boat! Affordable dive packages!

**MARATHON TO KEY WEST** - Private Homes and Condos. \$200 - \$1,500 / Week Accommodations. Dive Packages, Brochures Available. 1-800-874-1894. Sullivan Real Estate.

**MARATHON WATERFRONT HOMES/APARTMENTS** - For Rent by Week / Month - with or without 20'-23' Powerboat. Dive Sombbrero, Looe Key. (305) 743-0391.

### GALAPAGOS

**HAMMERHEADS, WHALESHARKS, DOLPHINS, LAND EXCURSIONS** - Two naturalists included on the ultimate dive boat. Northern islands included. Video available. Aquatic Encounters. (303) 494-8384. Fax (303) 494-1202.

**LAMMER LAW** - 95 ft. Trimaran. US / CAN 800-525-3833. Experience unique u/w & topside wildlife encounters while enjoying affordable elegances. Great autumn specials now available. LANDFALL ADV TRVL 800-525-3833 CA 510-794-1599.

### HAWAII

**DIVE MAUI** - Outer-island dive trips, best locations, affordable packages. Sea caves, turtles, walls! NAUI / PADI / SSI NASDS Training. (808) 667-2080.

**ECOSCAPES DIVE ADVENTURES** - Kona Hawaii, Daily Charters, 43' Boat, Manta Night Dives, Blue Water Dives, Great Packages, Get Hot. Stay Hot. 1-800-949-DIVE.

**NITROX TROPICAL DIVERS** - Kauai's Exclusive Nitrox Certification and 24-hour fill service. Tank sizes to 140 cf, Packages, Information, 1-800-695-DIVE, DOUBLE YOUR BOTTOM TIME!

**OAHU'S BEST DIVING** off the Leeward Coast! RAINBOW DIVER II, Glass Bottom dive boat. Small groups, professional crew. 1-800-982-6747 for FREE Aloha Packet.

**PU'U KOA RENTALS** - You can afford Maui. Exceptional vacation lodging with all the amenities of home. \$60-\$75 / nightly. Monthly rates. Call 10 a - 1 p M-F, Hawaiian time. 800-377-3284.

### INDONESIA

**DIVE & DIVE'S PADI DIVE CENTRE** - Daily trips, Safari Tours. Equipment Sales. JI By Pass I Gusti Ngurah Rai 23, Sanur - Bali. Phone 0361-288052, Fax 0361-289309.

### JAMAICA

**POSEIDON DIVERS** - PADI Dive Center at the Montego Bay

Marine Park. Complete pkgs. P.O. Box 152, Reading / St. James. Jamaica 1-800-880-5224.

### MARSHALL ISLANDS

**CENTRAL PACIFIC DIVE EXPEDITIONS** - Marshall's dive specialist - U.S. reservation office for Maduro, Mill and Kwajalein diving. Individual group; escorted / unescorted; modern hotels / thatched huts. Be among the first! YOU select the itinerary: wrecks, reefs, walls. 800-U-GO-DIVE or (714) 551-1167.

### MEXICO

**BAJA EXPEDITIONS** - SEA OF CORTEZ 1-800-843-6967 Fax: (619) 581-6542. Live-aboard trips to La Paz and Socorro Island. Hotel packages with 3 dives / day. 2625 Garnet Ave., San Diego, CA 92109.

**CABO AND LA PAZ** - Dive Sea of Cortez with Sea Lions, Hammerheads, Whalesharks, Dolphins, Mantas. Best accommodations, dives and airfare. 1-800-367-5960.

**COZUMEL HOMES FOR RENT** - Seafarnt homes 1-10 bedrooms. Town homes 1-4 bedrooms. Dives, car rentals, archaeological trips arranged. 1-800-833-5971.

**COZUMEL - VILLAS EL CARACOL** - 1 to 3 BR from \$95/night. Pool, AC, Maid, Gear-Rinse, Kitchens, Resident Manager & More! Escape hotel rooms, enjoy real Mexico. Call U.S. Owner 1-800-291-2715.

**WHOLESALE MEXICO** - Cabo, Cozumel, Baja, and Central America. Air, Land, and Dive Packages. Reservations through US Office. Pacific Coast Adventures 1-800-491-3483.

### MICRONESIA

**YAP'S PATHWAYS HOTEL & BEYOND THE REEF CHARTERS** offers hotel / dive packages. Relax in deluxe cottages, receive personalized diving services POB 718, Colonia, Yap 96943; Tel 691-350-3310 / 2488, FAX: 691-350-2066.

### SABA

**CAPTAIN'S QUARTERS** - Victorian guesthouse w/ sweeping ocean / mountain views. Packages w/ Saba Deep, Sea Saba & Wilson's. Direct 011-5994-62201. Fax - 62377 or Caradonna Tours 1-800-328-2288.

**SABA DEEP DIVE CENTER** - Full-Service Dive Center. NAUI - PADI - ACUC - CMAS. Restaurant & Boutique. Personalized service to groups of any size. Complete dive packages available. P.O. Box 22, Fort Bay, Saba, Netherland Antilles, 011-599-46-3347, 011-599-46-3397 (Fax).

**SEA SABA DIVE CENTER** - P.O. Box 530 Windwardside, Saba, Netherland Antilles, Fax 011-599-462362, Phone 011-599-46-2246. Full Service Dive Operation With 2 40' Uncrowded Dive Boats, Expert, Experienced Instructors. Accommodations Within Lush Tropical Setting With Views Of The Sea And The Rainforest. Diving Within The Saba Marine Park. PADI, NAUI, SSI.  
**WILSON'S DIVE SHOP** - P.O. Box 50 Saba, Netherland Antilles. Small Groups - Personalized Service - Waterfront Location. Diving Saba Since 1973. 40' Custom Dive Boat. Phone / Fax 011-599-4-63334 or 62541.

### SOUTH PACIFIC

**DIVE PACKAGES** to Rarotonga & Aitutaki - Cook Islands \* Apia, W. Samoa. Outstanding dive sites - Unique Accommodations - Some meals & Orientation tours - (800) 440-6232, Fax (808) 667-7639.

### ST. MAARTEN

**LEEWARD ISLANDS DIVERS** - Phone / Fax 011-599-5-42262 / 42866 Simpson Bay Yacht Club - Saint Maarten - NA, PADI, SSI, NAUI facility. Dive St. Maarten, Anguilla, St. Berth & Saba. We are dedicated to diving!

### ST. VINCENT'S

**ST. VINCENT / BEQUIA TRAVEL SPECIALIST** - Widest selection of scuba/vacation/honeymoon economy to luxury resorts. Call LANDFALL PRODUCTIONS DIVE & ADVENTURE TRAVEL U.S. / Canada 1-800-525-3833. CA (510) 794-1599.

### UNITED STATES VIRGIN ISLANDS

**LOW KEY WATERSPORTS, ST. JOHN** - PADI 5 Star IDC Training Facility. Beginners through experts. Reef, wreck & night dives. Certification and student referrals. Dive packages available. 1-800-835-7718, 1-809-693-8999.

### OF INTEREST TO ALL

**ASIAN LADIES** desire correspondence / lifemates! Free details including photos. Philam Connection. 1520 N. Hwy. 97, Ste.328, Redmond, OR 97756.

**Dive Belize - Bonaire - Cozumel!** One Call Does It All! Dive for 4 days / 3 nights from only \$771 Air inclusive vacations available. Featuring Club Cozumel Caribe, all-inclusive beachfront resort from \$109 per night. Rates: p/p db/occ land only, subject to change without notice, valid 4/16 - 12/15/94. 1-800-327-2254.

**DIVE SHOPS AND STORAGE BUILDINGS** - Manufacturer direct - Inventory reduction. Manufacturer has slashed prices on new steel frames & sheeting for a limited amount of dive shops & storage buildings. Easy DO-IT-YOURSELF Construction. No heavy equipment needed to erect. Examples: 27x36, \$7,751 value, NOW \$3,975. 36x48, \$12,145 value, NOW \$6,220. 42x60, \$17,250 value, NOW \$8,846. Some larger sizes available. Immediate delivery available. We ship worldwide. 1-800-843-8275 or 612-593-1000.

**GAYLESBIAN DIVERS:** Cozumel, Belize, Egypt, more! Group departures year-round. Undersea Expeditions, P.O. Box 9455, San Diego, CA 92169. (619) 270-2900.

**PALAU PACIFIC RESORTS** needs experienced, hard working Secretaries and Chefs. Fax resume and salary requirements to GM at 680-488-1606.

DECEMBER 1994 ISSUE  
DEADLINE FOR COPY AND PAYMENT  
SEPTEMBER 15  
FOR ADVERTISING RATES AND  
INFORMATION CALL  
LAURA SETTLES  
912-351-6232



# THE WATER PLANET

## LET IT SNOW, LET IT SNOW, LET IT SNOW

These microscopic organic particles are nearly invisible.  
They're also the glue that holds the ocean's food chain together.

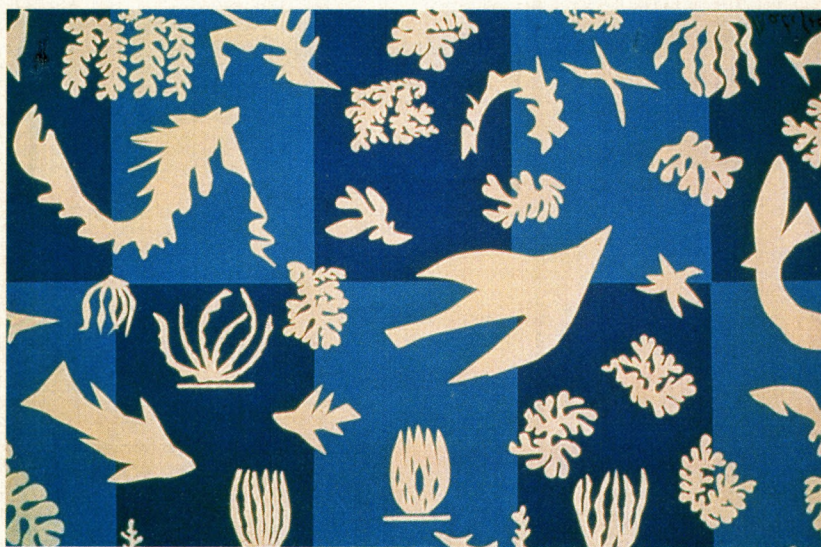
BY DAVID ABRAHAMSON

**T**he late Rachel Carson, author of *The Sea Around Us* and *Silent Spring* and without doubt one of the Ur-mothers of modern environmentalism, called it "the most stupendous snowfall the earth has ever seen." Found in all the world's oceans, the stuff is blessed with a wonderfully improbable name: *marine snow*. Comprised of uncounted zillions of microscopic particles, mostly of organic origin, the stuff has only in the last decade or two been regarded as a worthy subject of serious inquiry. Also only recently, we have come to understand that it may in fact be part of one of the planet's most critical life-supporting cycles.

Typically dispersed in gauzy flurries of highly diluted white clouds, marine snow was long thought to gently waft its way through the depths toward the ocean floor. Though only indistinctly visible to the naked eye, its constituent elements are fairly easy to determine. It is largely made up of detritus—small residual bits and pieces of both plants and animals—as well as some nonorganic matter, most of which originated at or near the surface of the sea. One way to think of it is as a *mélange* of leftovers: the remains of zooplankton, strands of single-cell algae-like plants called diatoms, fish feces in somewhat larger pellet form, grains of sand, dust, soot, pollen and assorted pollutants. It's also apparent that a wealth of microorganisms make their homes on and inside the snow's irregularly shaped surfaces and structures.

The long-held conventional view of marine snow was that it was completely unimportant. "Until the mid-1970s, most marine scientists considered snow a nuisance, if they considered it at all," wrote Victor Cox, the author of *Ocean Life: Beneath Crystal Seas* and *The Living Ocean* and a contributor to *Sea Frontiers*. "Consensus was that, except for large fecal pellets, this stuff took centuries or longer to sink to the sea bottom where it built up sediments layer by layer. Boring subject—give it a few hundred millennia and it might be of interest to geologists."

Then biological oceanographers Alice Alldredge of the



University of California at Santa Barbara and Mary Silver of U.C. Santa Cruz decided to take a closer look at marine snow. Improbable as it might seem from a study subject so unrepossessing, the result has been a whole new understanding of the planet's "biological pump," as well as highly prestigious Bigelow Award gold medals from the Woods Hole Oceanographic Institution for the co-investigators.

The key is the snow's role in what has been called a "grand biogeochemical process" related both to the ocean's capacity for storing carbon and how, given long-term concerns about the greenhouse effect, that might affect the global climate. What the two California scientists found was that marine snow is a crucial link in a network of biological and chemical reactions that recycle carbon in the ocean after removing it from the atmosphere.

Microscopic marine plants that live near the sunlit surface and extract carbon from the carbon dioxide in the atmosphere are eaten by zooplankton, whose waste products, along with other carbonaceous organic matter, become a major component of marine snow. What happens next is the heart of Alldredge and Silver's original scientific contribution. What they discovered was that, bound together by both mucus excreted by the zoo- (Continued on page 115)

THE BALTIMORE MUSEUM OF ART



# Discover the Real Treasure of Diving... in Bonaire!

Crystal-clear, calm protected waters, teeming with undersea exotic creatures, caverns, walls, coral reefs, and a land of rare animal life, foliage and birds... all in their natural habitat.

Enjoy this affordable and newly refurbished SUNSET BEACH HOTEL vacation facility, including an on-property, fully-equipped dive shop located at Sunset Beach's beautiful sand beach. Our new, exclusive steak house offers prime, imported cuts, and a fun-for-all Karaoke. Relax in the new fresh-water pool and any of the three open-air jacuzzis. Entertainment, sightseeing, sports activities and island shopping are also available.

Take advantage of all that BONAIRE and SUNSET have to offer. Savor forever the real treasure of the island...

## *The Memories!*



## Sunset Beach Hotel

## 1994 BON-ANZA

# \$899<sup>00</sup>

per pers.  
dbl. occ.

Seven nights, valid  
4/15/94-12/14/94.  
Travel Mon. thru Thurs.  
(add \$39 for Fri., Sat.,  
Sun. travel)

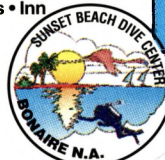
### Price Includes:

#### • Roundtrip airfare from Miami to Bonaire

- U.S. Departure Tax
- U.S. Federal Taxes
- Hotel transfers
- Welcome cocktail
- Breakfast buffet daily
- Map of Bonaire
- Bonaire poster
- One day car rental per room
- Six days of diving
- One 1-tank guided boat dive per day
- One boat night dive per stay
- Unlimited airfills for offshore diving
- Use of tanks, weights and weightbelt
- All service charges and taxes

For Non-Diving Companion Deduct \$200 • Upgrade to 12 Boat Dive Package Add \$80. Air Add-on from Atlanta from \$60 per pers. Call for add-on rates from your home city. *Not included:* \$10 Bonaire Departure Tax, \$10 Marine Park Fee and Car Insurance. *Prices subject to change and availability.*

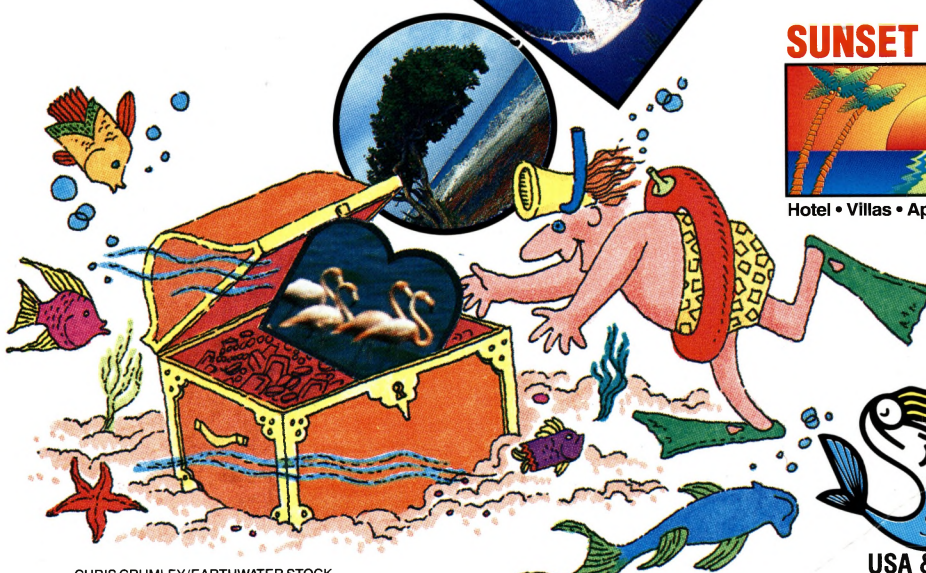
## SUNSET RESORTS



## Caradonna Caribbean Tours

Scuba Diving Travel Specialists Inc.

USA & CAN: 800/328-2288 • FL: 800/330-3322  
P.O. Box 3299/Longwood, FL 32779 • 407-774-9000/FAX 407-682-6000



CHRIS CRUMLEY/EARTHWATER STOCK

CIRCLE NO. 75 ON READER SERVICE CARD





A close-up, high-contrast photograph of a diver's face in profile, wearing a blue wetsuit and a Sherwood Maximus regulator. The diver is holding the regulator with their mouth and hand. The background is a bright blue sky. The image is split vertically by a torn paper effect, with the right side containing text.

M A X I M U S

## **Maximum freedom from Sherwood Maximus.**

You dive because you love the peace, beauty and the sense of freedom. The last thing you want is equipment getting in the way.

The Maximus from Sherwood. Simplicity in design and operation.

Developed for unmatched comfort and freedom in the water, the Max is designed to give you unrestricted movement and performance.

The Max's dual swivel underarm hose connects to a completely new second stage. The redesigned mouthpiece and chin rest allow the Maximus to fit comfortably close to your face, reducing jaw fatigue. The second stage air demand system lets you adjust the airflow to your diving requirements.

In addition, the Max has a patented heat and moisture retention system that makes it your all-world choice for cold or warm water diving.

The Sherwood Maximus is technically superior. Operationally easy to use. A premium blend of form and function. See it at your nearest authorized Sherwood dive store or write: Sherwood, Dept. C, 120 Church Street, Lockport, N.Y. 14094.

 **SHERWOOD  
SCUBA**

**So simple it's ingenious.**

CIRCLE NO. 12 ON READER SERVICE CARD

SHERWOOD